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AGRICULTURAL ECONOMICS
AND SOCIOLOGY

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AND MARKETING OF COTTON . . . I

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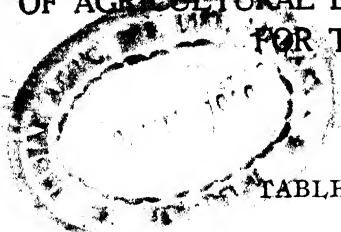
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No. 1

THE FINANCING OF THE GROWING AND MARKETING OF COTTON (I)

I. — GENERAL REVIEW OF THE QUESTION.

The problem of financing the growers of cotton, in itself difficult for the reason that the great majority of them are small and medium producers for the most part devoid of reserve capital and capable of offering only slender security, has become much more complex as a result of the economic crisis; to the need of credit for the ordinary working of the holding has been added since 1929, that is, since the beginning of the economic depression, a new series of needs closely related to the fall in the price of cotton, which caused a large proportion of the cotton-growing farms to be worked at a loss.

The index-numbers (2) of average prices in gold francs per quintal of the three principal types of cotton by commercial season were, in fact, as follows (1927-28 = 100):

Commercial season	Middling at New Orleans	M. G. Broach, P. G. at Bombay	Sakellaris, P. G. F. at Alexandria
1927-28	100	100	100
1928-29	95	89	94
1929-30	81	72	76
1930-31	50	47	43
1931-32	31	36	25
1932-33	34	36	26
1933-34	34	33	25

From this table it appears that since the 1927-28 season the prices of cotton on the three principal export markets of the world fell steadily until the 1931-32 season, when the decline below the prices of 1927-28 reached 69 per cent. at New Orleans, 64 per cent. at Bombay and 75 per cent. at Alexandria, and remained at about the same level in the succeeding seasons 1932-33 and 1933-34.

(1) This article is based to a large extent on information obtained through an inquiry addressed, in a certain number of producing countries, to banks and to public and private institutions interested in the financing of the cultivation and sale of cotton, to whom we offer our best thanks for their collaboration.

(2) *The World Agricultural Situation in 1933-34* (Part I, Chapter II, Section V: Textile Products). International Institute of Agriculture, Rome, 1935.

It may accordingly be concluded that the majority of cotton-growers are now indebted, on account of having had to sell at prices below the cost of production.

Special statistics of the indebtedness of cotton-growers are not available, though they would be of value in throwing light on the situation and in explaining the difficulties and risks amid which the function of giving credit is exercised, but there exist statistics on rural indebtedness in general for the principal cotton producing countries and these enable us to obtain an idea of the serious distress resulting from the fall in the prices of agricultural products, amongst which cotton stands in the front rank.

In 1928 farm-mortgage indebtedness in the United States (1) amounted to nearly \$9,500,000,000, and short-term indebtedness, represented chiefly by loans from local banks, ran to about \$3,000,000,000 more. Farmers owed large additional sums to live stock loan companies, farm implement companies, and merchants. Total farm indebtedness undoubtedly exceeds \$14,000,000,000. By 1932 the mortgage indebtedness had been reduced to about \$8,500,000,000 and the total of other forms of farm indebtedness had declined also. But this decline, it is noted, of farm indebtedness is largely a result, not of normal liquidation, but of foreclosures and forced sales. In 1932 for the country as a whole nearly 16 per cent. of all mortgaged farms were encumbered for more than 75 per cent. of their value. The mortgage debt represented 25 per cent. of the value of all farm land and buildings, and about 40 per cent. of the value of all mortgaged farms. It was two and a half times greater than in 1910. Even in 1929, before the depression, farmers had difficulty in meeting their interest charges and in retiring maturing loans. Even then they were not getting a fair exchange value for their products. When farm prices dropped in the depression to 50 per cent. below pre-war, payment became impossible for great numbers of farmers, especially those carrying heavy indebtedness. The depression disrupted short-term credit facilities as badly as it did mortgage facilities.

As to India, it is known that the most serious agricultural problem of the country is precisely that of indebtedness which affects about 75 per cent. of the population and is estimated by the Indian Central Banking Committee for British India alone to have amounted in 1929 to 900 crores of rupees, a figure which, since then, has considerably increased.

In Egypt, the unprecedented fall in the price of cotton has crippled the agriculturist (2): his hoardings have been exhausted and his resources weakened, while his obligations have become intolerable. As the result, the real burden of debt was trebled and expropriations increased.

The difficulties of marketing resulting from the keen competition to find outlets on the world market and rendered more acute by the new commercial

(1) *Yearbook of Agriculture 1934*. United States Department of Agriculture. Washington, 1934.

(2) The prices of cotton remained during the whole of the year 1934 at a very low level, but it must nevertheless be recognised that they were appreciably higher than those that prevailed during the first years of the crisis.

policy of restriction, while they have given an impetus to the improvement of systems of cultivation and in general to the reduction of costs, have made it urgent to provide means for giving support to the grower during the marketing of his product. The maintenance of the price has thus become the most absorbing preoccupation of the credit institutions. The credit policy of the Governments has itself come to be directed, in recent years, towards the defence of the markets for the principal agricultural products and the conversion of onerous agricultural debts.

But the maintenance of the price of cotton not only involves the provision of vast financial means but also requires installations for preliminary manipulation and, above all, for the conservation of the precious raw material. To these may be added the delicate service of the valuation of the goods for the purposes of credit and the no less essential service of information regarding the course of the markets, which have become extremely fluctuating in consequence of sudden changes in currency values. In fact there has arisen quite a new banking practice rendered necessary by the situation and very different from the much simpler and less costly traditional forms.

On the other hand, the tendency which is noticeable here and there to substitute artificial fibres for natural fibres and to introduce mixtures of different fibres with the object of reducing imports of cotton and restoring the balance of trade, is leading to a redistribution of the crops grown, which is already being studied and even carried out in some countries.

In the United States the well-known systems of production adjustment and the monetary policy raised the prices of cotton in 1934 to such an extent as to prejudice American cotton on the world markets. Exports fell considerably in 1934.

To the facts here noted as likely to have a more or less direct influence on the system of credit and on the financing of the product with which we are dealing, may be added the encouragement officially given to a greater diversification of the crops grown for export. The fall in the price of cotton and the distress occasioned by it have made clear the advantages of a diversity of crops.

In the United States it is remarked in this connection (1) that the problem of crop diversification is primarily agricultural, but it is commercial also, in that it affects the individual farmer's income and, likewise, the economic well-being of the community. The significance of the fact that cotton is a commercial, cash crop, together with the fact that once a cotton farmer is in debt he must continue to grow cotton, as that is his best source of money income, is familiar to all. The disadvantages inherent in a single crop system of agriculture, under which cotton has long been produced, include the possibility of the failure, it is pointed out, of the one crop, in which event there may be no farm income at all. The importance of producing crops other than cotton which will tend to make the farm self-supporting, has been brought home to farmers by the refusal of banks to extend loans unless the farmers produce food and feed stuffs.

(1) *Cotton Production and Distribution in the Gulf Southwest*. United States Department of Commerce. Bureau of Foreign and Domestic Commerce. Washington, 1931.

Other banks grant larger loans to growers who diversify their production. In fact, some prominent banks have taken the lead in advocating crop diversification and in encouraging and actually aiding farmers to grow other crops. In this connection it will be recalled that the production of a greater part of the family food and living supplies on the farm is advocated as a means of reducing the amount of short-term credit a farmer requires.

It may be added that on farms where most of the crop land is in cotton, there are seasons when practically the whole labour force and all equipment are idle. The employment of this labour and equipment in the production of small grains during the quiet cotton seasons helps to increase the profits on the farm. Also, when sole reliance is not placed in one crop, the agricultural risk is better distributed, and over a period of several years the losses are probably smaller.

In Egypt, too, the necessity of diversifying agricultural products in view of the serious consequences of the fall of prices is now fully recognised. The Government contemplates liberating the country, as far as may be possible, from the disadvantage of being dependent on a single product, such as cotton, the factors affecting the rise and fall of the price of which elude its control, especially, it is remarked, since the experience of the crisis has demonstrated the dangers of a single crop system.

Following the same order of ideas, encouragement is now being given in Brazil to cotton-growing, in order to avoid the disadvantages of dependence on coffee-growing.

But it is obvious that the changes in the crops grown and all the improvements which it is sought to introduce into cotton-growing itself with a view to enhancing the quality of the product by the selection of varieties—since competition is becoming keener on the basis of the quality of the fibre—require the investment of large amounts of capital for considerable periods of time. In the present phase of declining prices this kind of investment is accompanied by heavy risks and it is not accessible to the small growers.

The credit status of the small and medium growers is certainly the more difficult because, as has already been noted, they have no reserves of capital. And when it is remembered that in the United States out of 1,640,025 cotton farms 1,477,061 are farms between 10 and 174 acres in area and that in Egypt the greater number of cotton growers occupy lands the area of which rarely exceeds 5 feddans (4.2 acres) and that in India and in China (1) the small farms are the most numerous, all the complexity of the financial problem in relation to this class of growers will be understood. The Government of the United States has been so greatly preoccupied by the question as to include amongst the subjects to be dealt with in a great inquiry on cotton (2) which is now being carried out by the Bureau of Agricultural Economics, that of "improving the credit and financial status of the small cotton grower."

(1) In China nearly two thirds of the farms have an area not exceeding 20 mow (1 mow = 0.614 ha.).

(2) *Preliminary Statement of a Cotton Research Program*. Prepared by the United States Department of Agriculture. Washington, D. C., February 1935.

It is now of interest to inquire whether the systems of financing in operation in the cotton-growing countries respond, either from the point of view of organisation or from that of available means, to the new requirements. Some information on the subject is contained in the following pages. We here confine ourselves to observations of a general character.

There does not exist any special organisation for giving credit to cotton-growers, who accordingly obtain the means of which they have need either from the system of credit for agriculture in general, where it exists (as in the United States), or from the ordinary banking system.

Apart from this organised credit, which is more or less efficient according to the country, there exists unorganised credit, practised by private individuals in various forms.

Organised credit is more or less disciplined or controlled by the State and is relatively less costly; unorganised credit is not controlled, it is usually costly and sometimes usurious. There exist also forms of assistance or relief for cotton-growers (gratuitous or semi-gratuitous supply of seed, of fertilisers, etc.) which are not, strictly speaking, credit measures, as they lack the essential characteristics of credit, but are rather forms of State intervention in favour of this class of producers. They are more frequently to be found in new countries and in countries of more primitive civilisation.

Credit on more favourable conditions is usually granted by agricultural banks, by co-operative credit societies and by co-operative marketing societies, while credit on more onerous terms is granted by commercial banks and private lenders. The granting of loans by such banks to small growers before their crop has reached maturity involves a variety of risks and of proceedings disproportionate to the slender profit that can be derived from it. The commercial banks, moreover, require guarantees that the smaller cultivators are not, as a rule, in a position to offer. Thus, for example, in Egypt, if the area of the land belonging to the borrower does not exceed 5 feddans, the law prohibits a mortgage being placed upon it.

The agricultural banks undertake chiefly the financing of production, while the commercial banks chiefly finance the "movement" of the product.

There is a tendency towards a gradual substitution of agricultural banks for commercial banks in the financing of cotton-growing, but complete substitution cannot take place since not all of the countries in question have agricultural banks capable of assuming this function.

Special importance attaches to the work of the co-operative societies which, however, have not yet reached (except in the United States) the desired development in the matter of marketing, but which are everywhere strongly advocated (notably in India, China and Egypt), their useful moderating action on the markets and the low cost of their services being highly appreciated.

In striking contrast with the work of the co-operative societies is that of the money-lenders, who in various forms and under various names (merchant credit, supply merchants, brokers, sowcars, up-country merchants, petty merchants, etc.) carry on intermediary operations which are usually costly and sometimes usurious.

At times the figure of the local money-lender dominates the situation, with the resulting sacrifice of the producers, particularly the small growers. For particulars regarding this source of credit we refer the reader to the notes which follow on the different countries and, in particular, to those on India.

"A function which one would normally expect to be fulfilled by purely banking institutions," writes Sir Edward Cook, Governor of the National Bank of Egypt (1), "is now shared by a large class interested in the cotton business. Thus the small merchant who buys up all the cotton grown near his village in order to resell it later to the exporter, the local ginning factory, the big Alexandria exporters with agents throughout Egypt—all are prepared to give assistance to the cultivator, either in the form of hard cash or by the loan of sacks and implements or by supplies of seed and fertilizers, in order to obtain the first claim on their debtors' cotton."

In the present phase it is essential, more than it ever was before, to reduce to the minimum the cost of intermediary services and, above all, to eliminate needless middlemen.

It does not appear from the statistics what percentage of the crop is handled, for example, in Egypt, by the up-country merchants. They are said to have been responsible, in pre-war days (2), for 55 per cent. of the crop, a proportion which declined during the war and post-war years to 20 per cent., rising again to 40 per cent. since the crisis. It is justly remarked that such middlemen as subsist during periods of acute depression, when margins are reduced to vanishing point, are able to do so only by virtue of genuine services rendered.

Plans to bring Egyptian growers into direct contact with foreign spinners have for long appealed to many who have at heart the interest of the fellah, and the desire to improve his lot by removing intermediaries whose profits seem to constitute a needless burden has been in marked evidence during periods of depression.

The question of the rates of interest is of fundamental importance. Here it must be asked: Have they been brought into line with the diminished monetary return from the crop? It may be replied that in the sphere of organised credit the rates are in course of being brought into line with the diminished return, but this is not the case in the sphere of private credit exercised by private individuals. We refer the reader to the rates of interest indicated in the special note on India as being charged in that country by the various givers of credit. It will be seen that, in India, in addition to the rate of interest, various other percentages are charged, on different pretexts, by the sowcar to the cotton-grower. It will be seen that, apart from these extra exactions, 45 per cent. of the money required for financing the growing of the crop is borrowed at rates between 12 and 50 per cent. and even over.

(1) EDWARD COOK: Financing the Cotton Crop: Changes in the Credit System. *Manchester Guardian Commercial*, 11 January 1935 (Special Egyptian Number).

(2) EMIN PASHA JEHIA: Eliminating the Middleman. A Cotton Distribution Plan Examined. *Ibid.*

In the United States, while the Farm Credit Administration constantly endeavours to reduce the interest rate, which is fixed for short-term credit at 5 per cent., the interest on merchant credit amounts to 10 per cent. or more.

It may further be noted that in this country 34 States, between 1934 and 1935, appreciably reduced the chattel mortgage fees or introduced into their legislation on credit other amendments with a view to enabling the greatest possible number of farmers to take advantage, at the lowest cost possible, of financing through the medium of production credit associations. Commenting on the new State legislation, the Governor of the Farm Credit Administration said: "The new laws vary somewhat among the States, but in general they reduce the cost of obtaining production credit, simplify procedure, thus expediting the closing of loans, and enable production credit associations and other reasonable-cost lending institutions to reach a class of farmers who for one reason or another could not be soundly financed under previous state laws."

In Egypt, the small peasant who obtains a first advance may have to pay 8 and even 9 per cent. for the loans which he contracts without any security beyond that of his signature and the signature of a friend. On the other hand, the rates charged by the *Crédit Agricole d'Egypte* were reduced as from 16 September 1933, as we shall see presently, to 6 per cent. for individuals and to 4 per cent. for co-operative societies.

In these facts and in the information that we will give in the notes on the different countries, will be found the confirmation of what has been stated above, that is, that the rate of credit is usually lower for organised credit than for unorganised credit.

Not less important, in the matter of financing, is the question of security. In general it is the ordinary banks and the private money-lenders who are most exacting in this respect; both classes of lenders seek to secure themselves with the greatest possible guarantees against the risk of the borrower's insolvency. The co-operative societies are less exacting, because they know their members well and can, therefore, assure themselves more easily of their solvency. They usually grant loans on the personal guarantee of two sureties, sometimes supported by some form of collateral security. The agricultural banks, which usually show a fuller understanding of the particular conditions of their clients, follow an intermediate course, requiring in different cases, according to equitable rules, personal or other security, or both together. The forms of security adopted in practice are indicated in the special notes on different countries.

A form of security which is widely adopted is the pledge of the product (cotton) against which a loan is granted. As is well known, for the maintenance of the price it is important, above all, to assure the orderly marketing of the production, so as not to cause a glut on the market at the beginning of each commercial season and so that the producers, pressed by the need of money, may not sell in three or four months a crop which can only be consumed in the course of a longer period. By giving them an easy and less onerous means of waiting, one renders them a great service, but at the same time, as it has been

justly remarked (1), one protects their business affairs against violent market fluctuations occasioned by offers being made when there was no demand to meet them. This means consists in advancing to them, on easy terms, a part of the price of their produce, which is handed over as security. But the ordinary banks do not seem the best qualified to make these advances as, not being equipped for this type of operation, they often demand interest, costs of storage and insurance, and other very heavy charges. The same cannot be said of the agricultural banks. Amongst others, the example may be taken of the *Crédit Agricole d'Egypte*, which has adopted a system of loans on the security of goods which is fully satisfactory to the producers. The loans granted by this bank for cultivation and harvesting expenses, as well as the sums due to the bank itself for the purchase of fertilisers are guaranteed by a privilege which is exercised on the sale price of the crop of the year in respect of which the loans were granted or the purchases were made.

In conclusion, the reduction of the cost of banking services and, in particular, the adapting of the rates of interest to the diminished return of the farms, the elimination of the middlemen who assume the functions, at the same time, of bankers and of sellers of the produce, the gradual replacement of the ordinary banks, where possible, by agricultural banks for the financing of cotton-growing, the reorganisation of the equipment of the credit institutions in such a way that they can render possible the more remunerative marketing of the product, are so many items in a credit policy aiming at placing the cotton-growers in a position to resist better the consequences of market crises.

II. — SYSTEMS OF FINANCING.

A. — *United States.*

Amongst the cotton-growing countries the United States offers the example of a most organic and effective system of agricultural credit (2) from which cotton-growers can obtain the means of which they have need.

This system is represented by the Farm Credit Administration, set up in May 1933, with the object of consolidating and co-ordinating the various federal agencies which deal with the financing of agriculture. By its constitution it was to undertake two district tasks. The first has been emergency financing to meet the credit crisis resulting from the general economic depression. The second has been the development of a complete unified system of credit

(1) JOUSSEF BEY HABAS: *Organisation rationnelle de la production et de l'écoulement du coton*. Report presented to the Cotton Congress in Rome (1935).

(2) Credit advanced to farmers and farmers' cooperative associations by the institutions under the supervision of the Farm Credit Administration from May 1, 1933, through December 31, 1934, totaled \$2,379,063,000, of which \$1,835,740,000 was loaned during 1934. Of the total amount advanced since 1 May 1933 approximately \$1,500,000,000 represented farm mortgage loans, more than \$689,000,000 was short-term production credit, and nearly \$195,000,000 consisted of advances to co-operative purchasing and marketing associations. (*The Second Annual Report of the Farm Credit Administration, 1934*. United States Government Printing Office, Washington, 1935).

institutions on a permanent basis to provide farmers and farmers' organisations with credit adapted to their particular requirements at the lowest cost consistent with sound business practices.

This second task involved, besides the co-ordination of the work of the existing agencies, the creation of new types of agency for the purpose of supplementing the previous agencies and the liquidation of those which were no longer adequate to deal with the new situation and the new agricultural policy.

The lending institutions in the permanent system are divided into three groups handling long-term credit, short-term production credit, and credit for farmers' co-operative buying and selling organisations.

Long-term loans, of which the cotton-grower may have need to finance purchases of land and permanent improvements to property, such as buildings and drainage, are granted on the security of first mortgages on farm real estate, through 12 Federal land banks and more than 5,000 national farm loan associations. The associations are local co-operative organisations which endorse the notes of individual borrowers and perform administrative duties in the field connected with making and servicing loans.

The interest rates on all Federal land bank loans through national farm loan associations have been recently fixed at 3 ½ per cent. for all interest payable in the one-year period commencing 1 July 1935 and to 4 per cent. for all interest payable in the two-year period commencing 1 July 1936. On loans made directly by the land banks, interest rates have been reduced to 4 and 4 ½ per cent. respectively, for these periods.

Cotton farmers who need money for raising, harvesting and marketing the crop may apply for loans from their local production credit associations. These associations, numbering nearly 600, are organised under the Farm Credit Act of 1933, and make loans on all kinds of crops, including cotton.

Production credit associations are co-operative in nature, consist of farmer borrowers, and make short-term loans on a business basis to farmers in every agricultural county in the country. They do not lend Government money, but obtain their loan funds by discounting borrowers' notes with a Federal intermediate credit bank. The 12 intermediate banks obtain their funds for discounting purposes from the sale of their debentures to the investing public.

The interest rate varies, but in January 1935 the rate was fixed at 5 per cent. a year.

Many cotton growers save on their interest costs by obtaining their loans in a series of instalments. They pay interest on each instalment only for the time they have the money.

When a cotton farmer borrows from the local production credit association he must offer enough security adequately to cover his loan. This security is in the form of a first lien on the crop to be financed by the association plus whatever additional collateral may be required fully to secure the loan.

Cotton growers may borrow for producing crop for any period not exceeding a year. The note representing the crop loan matures as nearly as possible at the time the crop financed is expected to be harvested and available for sale.

Production credit associations also make loans to cotton farmers on farm products in storage. Such "commodity loans" are made to help farmers to market their products effectively.

Finally, credit for farmers' co-operative associations and therefore also for co-operative societies for the marketing of cotton, is available through a system of 1 central and 12 district banks for co-operatives, organised under the Farm Credit Act of 1933, and through the 12 Federal intermediate credit banks.

Banks for co-operatives, in virtue of amendments contained in the Farm Credit Act of 1935, make available three classes of loans to farmers' co-operative associations.

(1) Working Capital Loans: such loans are made to supplement funds that farmers themselves furnish to their co-operatives for operating purposes.

(2) Physical Facility Loans: a co-operative desiring to buy, build, lease, or refinance a grain elevator, fruit-packing plant, cotton-gin, creamery, storage warehouse, or other physical facility, may apply for this type of loan.

(3) Commodity Loans: this type of loan enables a co-operative to make advances to its grower-members on commodities delivered to the association and to pay the costs of marketing. Such loans to cooperatives engaged in purchasing farm supplies are made principally to assist them in carrying their necessary inventories.

Working capital loans may be made for whatever length of time good business practice appears to require. Generally it is the practice of the banks for co-operatives to require repayment of working capital loans at the end of the marketing season for which the loan is made.

The interest rate on working capital loans is restricted to a maximum of 6 per cent. a year. Interest is charged only on the unpaid principal and for the time that principal is actually outstanding. The present rate (1 June 1935) is 3 per cent. a year.

As to facility loans the security is usually a first mortgage on the property itself together with other security as the bank may require. These loans are subject to the following conditions provided by the law: (1) no loan may be made for an amount in excess of 60 per cent. of the appraised value of the security offered; (2) no loan may be made unless the purchase or lease price is considered reasonable. The maximum interest rate is 6 per cent. The present rate (1 June 1935) is 4 1/2 per cent. a year.

In the case of commodity loans, the commodities held as collateral are usually represented by warehouse receipts, bills of lading, or other shipping documents, and must be staple, non-perishable agricultural commodities, or supplies purchased for resale to farmer members.

Staple agricultural products that have been approved by the Federal Intermediate Credit Banks as collateral for commodity loans include cotton.

Commodity loans are made for periods required for normal marketing operations and ordinarily mature in from 3 to 9 months, or when the commodity is sold. Where the security and other conditions justify, renewals at maturity may be granted.

The basis on which loans are made depends on the character, quality, and marketability of the collateral offered, the management and financial condition of the association, and other such factors. In no event may loans secured only by warehouse receipts or shipping documents be made for more than 75 per cent. of the market value of the commodity pledged as collateral and usually are limited to a lesser amount in the discretion of the banks.

The rate of interest on loans secured by commodities may not exceed 6 per cent.

The Central Bank for Co-operatives was established to serve large co-operative organisations. All advances of \$500,000 or over and loans to associations generally serving more than one Federal land bank district are made by the Central Bank. Applications for amounts from \$300,000 to \$500,000 are also made to the Central Bank but may be referred by the Central Bank to a district bank in instances in which borrowing associations can be served most efficiently by the latter type of institution.

In addition the Central Bank is authorized to discount loans for the district banks for co-operatives which were established to provide credit for local co-operative associations.

Particularly under a one-crop system of agriculture, where many expenditures must be made before there are any returns from the crop, it is important that a large volume of short term credit, specially from three to six months, be available to the producers.

There are two major purposes to which short term credit is effectively turned; one is production goods and services, as fertiliser, feed, additional labour, and the other is consumption goods, as food and clothing for the farm family. In the cotton-producing areas the seasonal production credit is used chiefly for purchases of fertiliser, feed, labour and, to a less degree, work stock and equipment. The other use of seasonal credit, namely, for consumption goods, is chiefly made use of by the small farmer who often borrows for family expenses; in this case it is difficult for him to establish himself on a self-sufficing basis, as he is always a season behind.

It is admitted that the use of credit for consumption purposes should be discouraged, and farmers should be encouraged to produce more for their own consumption and to live on their current income as far as possible.

But the difficulty in the whole situation is that so many small croppers and plantation tenants start with nothing, and no sooner pay off one debt than they have to borrow again. Under such circumstances it is most difficult for a man to accumulate any savings, for his labour alone cannot yield very large returns.

We have already mentioned the co-operative societies of cotton-growers of the organisation of which we must now give a brief account, as they also provide for financing their members.

Cotton farmers of the South have their own marketing system that serves the entire Cotton Belt through two large-scale co-operative merchandising agencies. Practically all cotton sold co-operatively in the Southern States is handled by the American Cotton Co-operative Association (New Orleans, La.) and the Staple Cotton Co-operative Association at Greenwood, Miss. These

two agencies handle a combined total of more than 2,000,000 bales of cotton annually. They have an aggregate membership of more than 210,000 farmers.

The national organisation at New Orleans is the sales agency of State and regional cotton co-operative associations. It maintains sales contacts in all important markets of the world through 12 American and 18 foreign offices and sells all of the cotton delivered by the nine State and two regional organisations which are its members.

The major function of the national organisation is merchandising. Other related activities include financing, warehousing, insuring, closing, and invoicing. The principal activities of the State and regional associations include: receiving and assembling members' cotton; preparing the necessary records as to weight, grade, and staple; distributing advance payments and making final settlements with the growers.

A grower may become a member of a State or regional association operating in his locality by signing a contract or marketing agreement. The periods covered by the contracts between farmers and their associations vary, but all contracts carry an annual withdrawal privilege.

The associations provide three pools for their members—cash or immediate fixation, optional, and seasonal. The grower may choose any of the three pool plans or he may place a part of his cotton in one pool and part in another. The cotton in each of these three pools is assembled in even running lots according to grade, staple, and character. These factors of quality are taken into consideration in determining the amount finally paid members for their cotton. This gives a premium to farmers producing the better grades and staples.

The three pool plans are:

(1) Under the cash or immediate fixation pool plan, final settlement is made with the grower on the day of delivery or as soon thereafter as the cotton is classed.

(2) If the farmer chooses the optional pool plan, he receives a cash advance at the time of delivery and reserves the right to determine later the time at which the base price of his cotton shall be fixed. When the price is fixed, he receives full settlement for his cotton.

(3) If the grower places his cotton in the seasonal pool he obtains a substantial cash advance at the time of delivery. When final settlement is made he is paid the average price obtained, less handling costs, on all seasonal pool cotton, grade, staple, and character considered. Marketing costs are taken out before final settlements are made with the growers.

In addition to marketing costs, a deduction may be made for the association's reserves. This deduction, in most instances, is 1 per cent. of the gross sales price. The reserves are credited to the account of each member in accordance with actual deduction. Associations make use of reserve funds for operating capital. Often at the end of a certain period, the reserves are returned to the growers in annual instalments in proportion to the deductions.

The American Cotton Co-operative Association borrows money to finance its own activities and also those of the State and regional associations from private or commercial banks and from banks for co-operatives.

Neither individual growers nor State and regional member associations borrow money directly from the Farm Credit Administration. Loans are first made to the American Cotton Co-operative Association and by it to the State and regional associations, which in turn advance it to individual farmer members on their cotton (1).

The sketch above given of the agricultural credit institutions represents the official organisation of such institutions; but there exist other sources of credit for cotton growers, namely, the ordinary banks, the supply merchants and other individuals, such as landlords.

Some remarks must be made on these sources of credit.

As banks like to keep their funds liquid, they prefer short time paper to that maturing in nine months, a year, or longer. Cotton growers of good financial standing can often obtain bank loans on their personal note. Others may give mortgages on live stock or machinery, or liens on the crop or indorsed notes. In a general way, banks are used for seasonal credit quite extensively in the western sections of the cotton belt, and are increasing in such use in the older cotton areas.

For years the supply merchant has been a major source of credit in the older cotton-producing areas, particularly among the small farmers.

Such credit may be arranged for in several different ways. Sometimes the farmer arranges with the merchant for a certain amount of credit, to be available in stated amounts over a given period, for example, a certain sum each month. He may agree to pay a stated rate of interest, giving a chattel mortgage or crop lien as security. Merchants may also grant credit by giving a farmer an open account against which he may charge purchases up to a certain amount. The interest may be taken care of by increased prices on the goods, or by a rate applied to the total amount of the purchases. Sometimes both these methods are employed. This is generally considered a very expensive form of credit. The man who pays his debts has to pay interests high enough to cover the merchant's losses on bad accounts. When a double interest charge is made, namely in increased prices and straight interest, he may not realise that fact.

Many merchants are encouraging cash transactions by showing both the cash and credit prices on goods, focussing the purchaser's attention on the difference between the two prices. The merchant's operating expenses are increased by his extension of credit. He may not have the proper training for such transactions, as his real business is selling goods, not acting as a banker, and he is bound to sustain losses in open-account transactions.

(1) *The Texas Cotton Growers' Finance Corporation*. A Preliminary Report. United States Department of Agriculture. Bureau of Agricultural Economics. Washington, D. C., March 1931 — *Cooperative Marketing makes steady growth*. Federal Farm Board. Washington, D. C., April 1932 — *Statistics of Farmers' Selling and Buying Associations*. United States 1863-1931. Federal Farm Board. Washington, D. C., June 1932 — *Agricultural Credit Corporations affiliated with Cotton Cooperative Marketing Associations*. By WILLIAM H. ROWE. United States Department of Agriculture, Washington, D. C., Septembre 1932.

So practically all interested agencies are uniting to urge farmers to borrow from the bank when they need additional funds, and then pay cash for their goods.

However, this procedure is hampered by the fact that many cotton farmers may not have the security with which to obtain bank loans. Furthermore, the transition from a long established custom to a new practice cannot be effected overnight, but it is the consensus of opinion that merchant credit is gradually giving way to bank credit.

For many plantation tenants and croppers the only available credit is that granted by the plantation owner or landlord. Many such growers have practically no assets, and a good part of their cotton crop is pledged to the landlord. Under such conditions they are dependent upon the landlord to carry them until their crop is marketed.

Many plantations run a commissary for the benefit of the tenants. Such stores, however, charge credit prices, as they have to bear the burden of the credit. Some landlords make cash advances to tenants, and others arrange for them to receive a certain amount of store credit.

Cotton factors were for years a major source of seasonal credit for cotton growers, but with the development of better local banking facilities and the growth of interior markets, the factorage system of financing, together with the factorage system of marketing, has declined. In fact, the factorage business now consists more of brokerage than of financing services.

B. — India.

A great inquiry (1) made known in 1931 the fundamental factors and the most characteristic aspects of the banking system of this country, while special inquiries on the financing and marketing of cotton were carried out between 1925 and 1928 by the Indian Central Cotton Committee (2).

The principal results of these two inquiries and in particular of the second retain even today a great part of their value and their significance; the figures contained in them have, of course, speaking generally, become even worse, as the situation since 1929 has felt the effects of the serious depression into which agriculture has fallen. This is true, above all, for the most thorny agricultural problem of the country, that of indebtedness (3), the amount of which, as has

(1) *The Indian Central Banking Enquiry Committee 1931*. Vol. I, Part. I: Majority Report - Part II: Minority Report. Calcutta, Government of India Central Publication Branch, 1931.

(2) *Indian Central Cotton Committee*. General Report on eight investigations into the Finance and Marketing of Cultivators' Cotton. Bombay, C. V. Thomas.

(3) P. J. THOMAS: *The Problem of Rural Indebtedness*. Madras, Diocesan Press, 1934. The author observes that the root cause of debt is the insufficiency of income, resulting from the smallness of holdings, inefficient methods of production and marketing and frequent failure of crops and loss of cattle. The agricultural population of India has been on the increase, but the area available for cultivation is limited. The proportion of agriculturists to the total population has increased from 61 per cent. in 1891 to 66 per cent. in 1901 and 73 per cent. in 1921, and the slight fall (2 per cent.)

already been noted, was estimated for 1929 by the Indian Central Banking Enquiry Committee for British India alone at roughly 900 crores of rupees, and has greatly increased since then in consequence of the fall in the prices of agricultural products.

It is calculated that if no repayment of principal was made between 1929 and 1932, the real burden of that debt must now amount to about Rs. 1,800 crores, and if all interest is in arrears, Rs. 2,200 crores. The total production in the chief crops has in the meantime diminished from Rs. 1,018 crores (in 1928-29) to Rs. 536 crores (in 1931-32). Thus while the income has greatly diminished the debt has vastly increased.

While the size of agricultural debt is a problem by itself, the rate of interest at which most of the debt has been contracted creates a second, and far more difficult, problem. Generally, the rates are very high and these high rates complete the cultivator's distress. The annual amount which the cultivator and other landed interests in British India have to pay by way of interest is calculated at the considerable figure of 169 crores of rupees. This roughly represents the cost of agricultural finance to India; now, in face of modern international competition, it is evident that no industry can possibly be run economically or efficiently if it has to pay such a heavy price for its working capital. Under such conditions of finance the cultivator is perpetually in debt. He has no escape from the iron walls of debt, ancestral or acquired, which ring him round from age to age.

As early as 1924 a sub-committee of the Board of the East India Cotton Association recognised the necessity of adequate facilities for financing the cotton crop up-country, in order to enable the grower to hold his cotton.

The Association requested the help of the Indian Central Cotton Committee to find out what facilities existed and what further steps were necessary to enable the farmer to hold his crop in case of a temporary slump in prices. The Central Committee decided in 1925 the execution of an inquiry into the financing and marketing of the cotton crop. The typical areas selected were Berar, North Gujerat, Khandesh, Middle Gujerat, Sind, the Punjab and Madras.

The inquiries were divided into two parts, *viz.*, the village investigation and the market investigation. Information was collected from each cultivator in the villages selected, with regard to his borrowings, production, and the method and time of disposal of his crop. The market investigation was designed to find out how many growers and non-growers resorted to the markets, what quantities were sold, the rates obtained, the methods of sales, the causes and the frequency of disputes and the market deductions and allowances that the sellers had to submit to.

recorded in the census of 1931, is of doubtful importance. The total cultivated area is 228,000,000 acres, and only 20 per cent. of it is irrigated. This works out at barely an acre per head of the total agricultural population, and about 4 ½ acres for every cultivating family.

Amongst the most recent works on the economic and social condition of India see also: CHOWDHRY MUKHTAR SINGH: *Rural India (Peasants' Poverty, its Causes and Cure)*. Allahabad, Krishna Ram Mehta.

In all 127 villages, 70 markets, 8,218 cultivators and 8,592 sellers at the markets, were examined.

From this inquiry, from other more recent sources and from information obtained directly, we take the following data on the finance of cultivators' cotton.

The following figures show the percentage of borrowers and non-borrowers in each area investigated in the years indicated.

	Borrowers	Non-borrowers
Berar (1925-26)	64 %	36 %
North Gujerat (1925-26)	71	29
Khandesh (1925-26)	78	22
Khandesh (1927-28)	71	29
Middle Gujerat (1927-28)	82.4	17.6
Sind (1927-28)	94	6
The Punjab (1927-28)	51.4	48.6
Madras (1927-28)	70	30
For all the above regions . . .	70 %	30 %

The percentage of borrowers is highest in Sind. There the cotton cultivators were in a hopeless state of indebtedness and very few of them were able to finance their own cultivation operations.

Practically the only borrowings made by cultivators are those taken at or just before the commencement of cultivation operations. The amounts borrowed for the later operations, such as weeding and picking, are comparatively smaller and loans are not generally taken subsequently, even at harvest time. Certain dues (Government assessments, water rates and rent, etc.) which are to be paid off by a fixed date are usually paid out of the sale proceeds of early pickings.

Unfortunately it is not possible to determine the percentage of debt incurred for cultivation and for unproductive purposes. This may be attributed to the fact that the bulk of the advances have to be allowed in cash.

The total borrowing is not all fresh debt but a certain percentage of it represents arrears.

The average borrowing of proprietors is much greater than that of tenants. This is attributable to the much larger credit that proprietors command. The average borrowings of the persons who are partly proprietors and partly tenants are higher even than those of proprietors, probably because they are substantial persons, rich enough to till rented land in addition to what they own, and therefore have greater credit.

As regards the interesting point of borrowing per acre under cotton, it has to be remembered that cotton is not the only crop grown on the holdings and to treat borrowings as if they were all for cotton cultivation would be quite misleading. Cotton occupied only 52 per cent. of the total area in the Berar and Middle Gujarat villages, about 45 per cent. in Sind and Khandesh, 37 per

cent. in Madras, and only 18 per cent. in the Punjab. The rest of the area was taken up by other crops—food grains and oilseeds particularly.

In the absence of information regarding other crops the "index of borrowing" gives a rough idea of the relation of borrowings to production. The rough "index of borrowing" (*i. e.*, the percentage of the borrowing per acre of total area to the value of the average yield of *kapas* per acre) for the various areas investigated is as follows:

Sind	50 (or a little over)
Madras (Western and Northern tract)	47
Khandesh (1925-26)	35
Berar	32
Khandesh (1927-28)	25
The Punjab	25
Middle Gujerat	20

The above figures indicate very roughly the solvency of the cotton cultivators in the tracts examined.

The indices further help to show the extent to which sowcars (local money-lenders and also often petty traders) are prepared to make loans. In Sind, they appear to have lent up to over 50 per cent. of the value of the outturn. The figure is the average. In individual cases, therefore, they must have advanced on much smaller security. This may explain why the Sind sowcars insist upon the additional security of the borrower giving an undertaking to sell his crop to or through them, why they carry away their debtor's crop at each picking and why they charge such exorbitant rates of interest.

We now indicate the various sources of advances with the percentages of the amounts borrowed from each of them:

Sowcars	65 %
Landlords	15 %
Co-operative societies	13 %
Friends and relatives	2.7 %
Petty merchants and traders.	0.2 %
Ginowners	1.6 %
Government (Takavi)	0.3 %
Others	0.4 %

Far and away the most important source of the cultivators' finance is the sowcar. In North Gujerat, Sind, the Punjab, Berar, Middle Gujerat and Khandesh he advanced 90, 77, 68, 65, 65 and 53.5 per cent. respectively of the total advances. Only in Madras does he not occupy the first place in the list of lenders, being responsible for only 27.3 per cent. of the total advances.

The sowcar in Sind (subject of course to many exceptions) is undoubtedly the most oppressive. He wields an enormous influence over his cultivator-

debtors and abuses his position in various ways. He not only charges very heavy rates of interest, but also exacts various other payments from them like the *sowcari lapo* and *sethai*. His debtors are bound hand and foot to him; they must sell their crop to or through him; and as a purchaser he rarely hesitates to cheat them in the matter of rates and in weighment. In some cases he is the virtual owner of the land and the crops, but to evade the provisions of the Land Alienation Acts he does not have the land transferred to his name but poses only as the *koonjro* or "financing partner." The debtors have often to render personal service to him, *e. g.*, repairing his shop or house, carrying his goods on their camels, etc.; but the most oppressive way in which some of the sowcars tyrannize over their debtors is through the *begar* system under which they get their private plots of land cultivated gratis by the forced labour of their debtors.

On the other hand the sowcars of Khandesh and Middle Gujerat are very considerate. Compared with 18 $\frac{3}{4}$ to 37 $\frac{1}{2}$ per cent. interest charged in Sind, the sowcars in Khandesh levy between 12 and 18 per cent. only. In Middle Gujerat the interest varies between 9 and 12 per cent. and more often it is the lower rate, which is also the rate charged by co-operative societies. At the same time neither in Khandesh nor in Middle Gujerat was any complaint received about the sowcar obtaining any indirect benefits from his debtors in cash, kind, or service, or about his being in any way a clog upon their freedom in disposing of their produce.

The part played by co-operative societies in financing the cultivators varies greatly in the different tracts. In Khandesh 41 per cent. of the loans were taken from co-operative societies. In Berar, the societies were responsible for 31 per cent. of the loans. This high percentage is however due to the figures for the villages of Akola District. By omitting Akola, the percentage would be reduced to 4 only. In Middle Gujerat the societies lent 18.4 per cent. of the total; in the Punjab 8.8 per cent.; in North Gujerat 2.5 per cent. and in Madras 0.5 per cent. only.

In Sind co-operative credit societies have a very great future. The societies are excellent institutions and have conferred much increased prosperity on their members.

The zemindar or landlord is, after the sowcar, the most important financier of the cultivators. In Madras he advanced 56.8 per cent. of the loans, in the Punjab 16.9 per cent. and in Sind 10 per cent. In Khandesh and Berar, however, advances from this source were insignificant. In Sind and in Punjab it is sometimes the practice for a zemindar to take a big loan from the sowcar with which he finances the tenants of his estate.

Friends and relatives have advanced small sums in all the areas, ranging from 1 per cent. in Madras to 5 per cent. in Khandesh. In most cases these loans were free of interest.

Petty merchants and traders have had a very small hand in financing operations. Ginowners also take but little part in this kind of business.

The *dalal* or agent of the big cotton merchant or firm does not take any direct part in financing the cultivator.

The three commonest systems of interest rates obtaining in the areas may be called (1) the "anna system;" for example, one-quarter anna per rupee per mensem (= $18\frac{3}{4}$ per cent.), or one-half anna per rupee per mensem (= $37\frac{1}{2}$ per cent); (2) the ordinary system, half per cent. per mensem (= 6 per cent.) or one per cent. per mensem (= 12 per cent.), and (3) what is called *panjoth* in Sind, and *sawai* in Khandesh and Berar. In their literal sense both words mean 25 per cent.; but as loans are made for about six months the interest really works out to 50 per cent. This is sometimes frankly styled "extra *sawai*" or "double *panjoth*." "Sawai for 3 (or 4) months" would therefore mean 100 per cent. (or 75 per cent.).

Several common rates of interest prevail in the different areas, and these have been grouped together. The general result is shown below in order of importance of the groups:

Groups of interest rates	Percentage of the total amount lent
$9\frac{3}{4}$ - $12\frac{0}{0}$	33
12 - $18\frac{3}{4}\frac{0}{0}$	20
below $9\frac{3}{4}\frac{0}{0}$	18
$18\frac{3}{4}$ - $25\frac{0}{0}$	14
25 - $50\frac{0}{0}$	8
0 (free of interest)	4
$50\frac{0}{0}$ and over	3
	<hr/>
	100

Fifty-two per cent. of the total loans were obtained at 12 per cent. interest or less.

The group "below $9\frac{3}{4}$ per cent." is composed mostly of loans made by co-operative societies (at $9\frac{3}{8}$ per cent., equal to a half-pice per rupee per mensem), and of a large percentage of the advances by sowcars in Middle Gujarat and Madras. The first group, " $9\frac{3}{4}$ to 12 per cent." includes some loans made by co-operative societies at $10\frac{15}{16}$ per cent.; most of those made by landlords, and a large amount made by sowcars. The group "12 to 18 per cent. and " $18\frac{3}{4}$ to 25 per cent." include the bulk of the sowcars' loans in Sind and the Punjab. The most important constituent in the next group "25 to 50 per cent." is the sowcars' loans at $37\frac{1}{2}$ per cent. in Sind. Rates of 50 per cent. and above were charged only in Sind, Khandesh and Berar; these include the double *panjoth* and the extra *sawai* referred to above.

The highest rates of interest are charged in Sind and the lowest in Middle Gujarat. In Sind, nearly three-fourths (72 per cent.) of the loans were obtained at the rate of $18\frac{3}{4}$ per cent. or more. In Middle Gujarat nearly the whole amount (95.7 per cent.) was obtained at 12 per cent. interest and under.

In connection with this subject it is necessary to point out that in some cases lenders derive other benefits from their borrowers. In Sind, the sowcar often gets from his cultivator-debtors small gifts in cash or kind at Divali or

on other auspicious occasions; he levies his *sowcari lapo*, and the *sethai* or commission on all sales of his debtor's produce; the debtors are at times required to render free service in repairing the sowcar's shop or house, and to give him the use of their camels for the transport of his baggage and his people. Then again, in Sind as well as in some other areas, where the sowcar happens to be also a petty trader (as he often is), the advances are not usually wholly in cash, but a larger part is in the shape of seed, grain, ghee, cloth and other things. There is an obvious gain to the sowcar from this method of lending. At some places the cultivator-debtor is required to give an undertaking to sell through the lender (usually the sowcar, but sometimes also the landlord). This again is an advantage to the lender, as it provides security, and at the same time yields *dalali* or commission on sale. In one of the Madras villages where ginowners lent large sums, it was made a condition that the *kapas* should be ginned at the lender's gin.

Thus it will be seen that the rates of interest given above are really only in many cases the nominal rates in contradistinction to the real rates which would include all the other benefits which the lender derives from his connection with the borrowers.

The borrowers are rarely required to give security for the loans by mortgage of land, live stock or crop, or otherwise. In some places, as we have seen, cultivators were made to give a written undertaking to sell their crop to or through the lender, and this virtually operates as a mortgage of the crops. At some other places there was only a verbal undertaking to this effect, or a "moral obligation." But rarely was land required to be mortgaged except to secure long term credit.

For ordinary loans security is not usually required, the acknowledgement of the loan or the signature of the borrower in the *khatabook* being quite sufficient.

As to the effect of borrowing on sales it may be stated generally that cultivators, except in Sind, are not hampered by their borrowings in the disposal of their *kapas*. In Sind 434 out of 680 borrowers, i. e., 64 per cent., gave a written undertaking to sell their crop to or through the lender. In North Gujerat cultivators appear to be in the hands of their financing agents to a certain extent, but considerably less so than in Sind.

From the investigations it also resulted that the cultivators (except in Sind) were able to, and did, hold their crop for considerable periods in expectation of higher prices; and that where, as in Middle Gujerat, they sold "early" it was because the season itself was extremely late, and not because there was any pressure by the lenders to realize the crop quickly to repay loans.

But when the crisis occurred, bringing with it the impossibility of marketing cotton at remunerative prices, the problem of the organisation of a suitable machinery for financing the marketing of crops became more urgent.

At present the cultivator is pressed heavily by the creditor immediately after the harvest; for the latter knows that if the debtor does not pay after selling his produce it will not be possible for him to pay till the next harvest. As early as 1931 the Indian Central Banking Enquiry Committee remarked that "the effect of this pressure is so great that the borrower is compelled to sell his pro-

duce as quickly as he can." They, therefore, recommended that co-operative sale societies which can advance money to the cultivators and enable them to avoid being forced to sell their produce at unfavourable rates will go a great way to help the cultivators.

A common feature of the recommendations made by the above inquiries conducted by the Indian Central Cotton Committee was that all the Local Governments of the provinces concerned were requested to help the development of co-operative cotton sale societies to provide the growers with a better outlet for their produce.

At the Second All-India Co-operative Institutes' Conference at Hyderabad, in 1931, also, there was deep concern expressed at the urgent and imperative need for co-operative organisation of the marketing of produce—in particular the great staples, cotton, jute, wheat and rice—and a resolution was passed stating that besides co-operative sale societies, central organisations should be set up with the assistance, financial or otherwise, of the State. The Conference appointed, for the four staples, four committees of notable leaders, with powers to co-opt prominent business men, to prepare suitable schemes for and to organise central co-operative organisations. The Government of Madras ordered, accordingly, a specific inquiry into the possibilities of co-operative marketing as a measure of relief during the depression in their terms of reference to the Economic Depression Enquiry Committee of 1931. They were "to examine the effects of the general economic depression and to report whether any measures should be adopted by the Government to mitigate them by arranging for the co-operative marketing of certain produce or otherwise." The report of the Committee contained a resumé of the findings of the Madras Banking Enquiry Committee on the question of co-operative marketing. The Committee approved of the lines of working of the Tiruppur Cotton Trading Society and suggested "an immediate investigation into the possibility of starting more co-operative sale societies for all kinds of agricultural produce" on those lines.

The whole question of marketing and of finance is now under examination by an special officer appointed by Government to work under the Imperial Council of Agricultural Research and marketing officers have also been appointed in each province. The work of these officers for organising the marketing facilities will be necessarily supplemented by establishing a banking organisation for marketing with its roots in the villages.

It has been suggested that it would be the duty of the special expert staff to be employed by the Reserve Bank of India to devise a scheme for financing the producer either through the indigenous bankers or through the co-operative organisation so as to enable him to derive the largest amount of profit from the sale of his produce.

We have already referred to the problem of the indebtedness which torments also the cotton-growers and causes the cultivator gradually to lose his land and to sink to the level of the landless labourer. The remedy that has been suggested and is being actually tried in different provinces of India is the outlawry of usury. Bills have recently been passed or are in the process of being passed into law in the different provinces making it illegal to claim or recover

interest at excessive rates. For instance, the Bengal Moneylenders Act, 1933, has fixed 15 per cent. as the maximum rate of interest that the Courts will allow and it limits arrears of interest that will be recoverable to an amount which must not exceed the principal. The 15 per cent. maximum rate shall have retrospective effect from 1918 and the maximum rate recoverable in cases of compound interest shall not exceed 10 per cent. Every money-lender shall, on demand, supply the debtor with an account every six months and, in case of default, interest shall cease for the period of default.

The Bengal Act is the type on which similar legislation in other provinces — e. g., United Provinces, Punjab, Assam, Northwest Frontier Province, and Central Provinces—has been or is being built and except for some minor differences in detail, here and there, the general lines of such legislation in the different provinces are very nearly parallel.

On the other hand, the conciliation of old debts, which is being attempted in some of the provinces through Conciliation Boards, might do much—especially now—when money-lenders throughout the country have almost lost all hope of recovering their money from the debtors as a result of the economic depression through which the country is passing.

We have referred above to the function of the co-operative societies for financing the cultivation and marketing of cotton and to the movement that has taken place in recent years in India in favour of their organisation. We may now add some detailed information about them relating to important cotton-growing regions in the Bombay Presidency which has been directly supplied to us by the Bombay Provincial Co-operative Bank, Ltd., and some information relating to the Central Provinces and Berar supplied to us by the Provincial Co-operative Bank, Ltd., of that province.

* * *

The Cotton Sale Co-operative Societies in Gujarat Division.

These societies make advances to agriculturists for growing cotton up to Rs. 4 per acre in the case of black soil and up to Rs. 10 per acre in the case of white alluvial soil on the security of two sureties. Interest is generally charged at the rate of $7\frac{13}{16}$ per cent. on such advances. When the raw cotton is ready, the agriculturists bring it to the society, from which they receive advances up to 75 per cent. of the market price of the cotton and repay the previous loans taken for growing cotton. The rate of interest on such loans is also generally $7\frac{13}{16}$ per cent. The cotton sale society arranges for the ginning and pressing of this cotton. It afterwards arranges to sell the cotton bales in the local market and pass on the benefit of higher prices to the agriculturists.

These sale societies provide the necessary funds out of their share capital and reserve fund. In case of need for larger funds, they approach the Central Co-operative Bank from which they receive advances up to 60 per cent. of the market price of the cotton in their possession at a moderate rate of interest.

The System of Cotton Finance in Surat District (Gujarat).

(a) *Through Co-operative Cotton Sale Societies.*

The co-operative cotton sale society obtains from its members in the beginning of the season, the area under cultivation for the cotton crop. The society then advances from Rs. 2 to Rs. 5 per acre to its members for the cultivation expenses by taking loan bond with two sureties. The society recovers such advances with interest out of the sale proceeds of the member's crops which he brings to the society for sale during the next season. If the member fails to bring his crop by selling it elsewhere, his shares in the society are forfeited and the dues from him are recovered from his property or from his sureties by getting an award against him. The society makes these advances from the money of its share capital and by borrowing from the Central Bank or by accepting non-members' deposits. The rate of interest on non-members' deposits varies from 2 ½ to 5 per cent. The rate of interest on advances to members varies between 7 ½ and 9 ¾ per cent. in the different societies.

Now when the cotton season begins the members begin to bring their cotton to a ginning factory selected by the society. The society maintains a record of the quantity of cotton each member brings and then advances to him 75 per cent. of the value at the market rate of the cotton including the advances given for expenses of cultivation. Most of the members of societies take such advances. After a major portion of the crop is sold the society decides a date from which no interest is to be charged on advances made to members. After all crops are sold the final accounts are settled. After meeting all incidental and management expenses from the proceeds of the sale, an average sale price is fixed and at that rate the account of each member is credited for the quantity of goods brought by him.

Finally the balance lying to the credit of his account after recovering the advances with interest, is given to him and if there is any debit balance it is recovered from him.

So far we have seen how the society finances its members. Now we shall see how the society is financed by the Bank.

When a society has been registered it has its particular amount of share capital already collected. The Bank advances cash credit for that amount without taking any tangible security except a pronote or a bond for about nine months in order to enable the society to finance its members for expenses of cultivation. But when the society collects the crops from its members, these advances are converted into advances against cotton. If the share capital of the society is invested as fixed deposits with the Bank, the Bank allows a cash credit on the security of the deposit. In the beginning of the cotton season the Bank gets the cotton (both seed and lint) insured in the Bank's name and takes possession of the same by appointing an agent. The expenses of the agent are paid by three or four societies working together in one ginning factory. The Bank's present rate of interest on advances is 6 per cent. with a

right of rebate of about $\frac{1}{2}$ per cent. to regular borrowers. From July to September this rate is lowered to $5\frac{1}{4}$ per cent. The Bank's agent keeps account of the goods taken in possession and sends regular reports daily to the Bank. On the strength of the agent's report, 60 per cent. of the value of the goods in the agent's possession at prevailing market rates are advanced to a society. The society is allowed to overdraw to the fixed limit sanctioned by the Bank from its current account. After the cotton is ginned and packed in pacca bales lying in the godowns the Bank agent is removed, the gin owner undertaking to act as the Bank's agent.

Co-operative Finance of Cotton in the Surat District.

Year	Total advances by co-operative cotton sale societies to their members Rs.	Rate of interest on the same	Total advances by Central Bank to these societies Rs.	Rate of interest on the same
1929. . . .	11,14,067	7 $\frac{1}{2}$ % to 9 $\frac{3}{8}$ %	4,53,000	5 $\frac{1}{4}$ % to 7 %
1930. . . .	13,42,723	do.	5,59,000	do.
1931. . . .	5,59,884	do.	4,15,000	5 $\frac{1}{4}$ % to 6 %
1932. . . .	8,13,563	do.	6,77,000	do.
1933. . . .	14,61,043	do.	9,16,000	do.
1934. . . .	15,05,908	do.	5,82,000	do.

(b) *Through Gin and Press Owners.*

The gin and press owners advance large sums to the farmers in the beginning of the monsoon for their cultivation and household expenses at rates of interest varying from 9 to 12 per cent. The farmers are generally faithful and so they bring their crops in the cotton season to these gin and press owners for sale. These merchants then go on making further small advances and after the season is over, they credit the proceeds at any price they like to the borrowers' accounts by taking their consent or otherwise. Sometimes they purchase the cotton at a price little lower than the prevailing market rate and out of the price settled the advances made are recovered with interest. But in all cases the farmers have to suffer in the matter of the quantity of goods where less weight is allowed over and above what they suffer in the form of lower price and higher rate of interest besides some commission charged to them for the sale of crops. A good many farmers still sell their crops in this way. But the progress of the cotton sale societies is rapid and during the course of the next few years most of the cotton-growing tract will come within the co-operative fold.

Financing the Cultivation and Sale of Raw Cotton in Khandesh Division.

(a) *Financing Cotton Cultivation.*

In the East Khandesh district and in West Khandesh district some portion of cotton cultivation is financed through agricultural co-operative credit societies while the rest is financed by local lenders. The main agricultural operations

and needs for which finance is allowed are: (1) bullocks, (2) fodder, (3) manure, (4) servants, (5) implements, (6) seeds, (7) weeding and (8) picking. Holdings being sufficiently large, services of a whole-time servant for the year, called the *saldar*, have to be engaged at about Rs. 200 per year before advent of the present depression and at about Rs. 100 thereafter. Artificial manures are not popular and are therefore not used. Crops are taken in rotation so as to minimise the use of manure. A pair of bullocks is used for a holding of 20 acres and generally lasts for about 5 years and cost about Rs. 200 before depression and costs about Rs. 100 now.

Before the advent of the present depression, the system of financing cotton cultivation by co-operative societies was regulated, but after depression set in in 1931, the system of finance had to be revised to suit the local conditions, giving sufficient scope and liberty to the agriculturists gradually to adjust themselves to the changed conditions. Loans are granted by co-operative credit societies to their members generally on two personal sureties at a rate of interest ranging between Rs. 9-6-0 per cent. to 10 ¹⁵/₁₆ per cent. and in rare cases Rs. 13-14-0 per cent. and repayable in one or two annual instalments.

In villages where there are no societies or to non-members in villages where there are societies, finance for cotton cultivation is provided by local money lenders. The rate of interest charged ranges between 12 and 50 per cent. In the case of good agriculturists with credit, the finance is allowed on their own personal security but in other cases, it is allowed on the security of lands. Finance for seed, weeding and picking is also allowed by *adtlas* or commission agents on the promise of sale of produce through them. The finance allowed has to be repaid out of sale proceeds of cotton next year.

(b) *Financing Cotton Sale.*

During cotton sale season, between November and February in both the Khandesh Districts, the big cotton-exporting firms open their sub-agencies at all prominent cotton markets in both the districts. (Dhulia, Shirpur, Dhondai-cha, Shahada, Ardhana in West Khandesh and Amalner, Jalgaon, Faizpur, Chopda, Parola, Bharangaon, etc., in East Khandesh) to be able to purchase unadulterated cotton. Opening of sub-agencies by these big exporters is of great value to agriculturists as this enables them to obtain the highest possible rates for their cotton.

Cotton sale is effected in one of the following ways:— (1) Sale at the village; (2) sale in town markets; (3) sale of ginned cotton, and (4) sale of pressed bales. Opening of sub-agencies by big cotton firms at important markets acts as an impetus to private individual enterprise as a number of petty dealers come forward to trade in cotton. When rates show a rising tendency, these petty dealers with due knowledge of fluctuations in New York and Liverpool run from village to village and purchase raw cotton from agriculturists at speculative rates. When rates do not fluctuate very much or show a falling tendency agriculturists have to sell their cotton at town markets. Agriculturists who understand the advantages of better lint and wish to preserve good seed, sell their cotton after

ginning. In times of depression, agriculturists with big holdings who can afford to do it get their cotton pressed into bales in order to hold it for better prices. Agriculturists who receive finance from co-operative societies have complete independence in disposing of their cotton. Agriculturists borrowing from local sowcars or from adtias have to sell their produce to their sowcars or through their adtias in order to preserve their credit.

There are no storage facilities in Khandesh worth the name and therefore no facilities for regulating the sale with a view to supporting the price on the market at present exist even in name. In fact, cotton cultivation is undertaken or cotton is sold by agriculturists without the least knowledge or forecast of the happenings or probabilities in the cotton world. Agriculturists are without any guidance or help whatsoever in the matter of sale. Their connections extend up to their town markets and so far as Khandesh is concerned, there is no agency to link them to the Presidency market, much less the export centres. It is therefore natural that instruments of credit drawn against storage of produce are things unknown in both the districts.

In the absence of storage facilities, agriculturists are more or less disabled from raising finance against pledge of their produce. In times of depression, temporary or protracted, agriculturists raise temporary finance against pledge of produce, at rates of interests ranging from 6 to 12 per cent. repayable on sale during the season at a margin of 10 to 50 per cent. In case the margin goes down, the lender disposes of the produce at the ruling market rate. Broadly speaking, merchants get necessary facilities of finance against pledge of produce from the Imperial Bank. Owing to low rates of interest prevailing in European markets and owing to better rates available in India, exporting firms have from this year stepped into the field and have commenced making advances to merchants against produce.

Another method of sale by which an agriculturist can realise a better price as well as raise money till final disposal is what is known as the *mogham savada*. Under this type of sale an agriculturist sells and hands over his produce with the contract that he may fix up the selling rate on any subsequent day at the ruling rate on that date. In such a bargain, the seller goes on receiving advances, within reasonable limits, without any interest being charged to him or without any insurance or other incidental charges and the account is finally closed when the selling rate is fixed with the buyer by the seller.

Another way of raising money before the crop is ready is known as the *zalap* system under which an agriculturist makes a forward sale contract, at a much lower rate than the then prevailing rate and raises temporary accommodation for his agricultural operations.

The institutions which help cotton cultivation and cotton sale in both the Khandesh districts are:—

- (1) Agricultural co-operative credit societies.
- (2) Taluka development associations.
- (3) Sale organisations: (a) West Khandesh Co-operative Purchase and Sale Union, Dhulia, with branches at Shirpur and Dhondaicha; (b) East Khandesh District Agricultural Sale Society; (c) Pachora Co-operative Cotton Sale Society.

(4) The Cotton Central Committee, Bombay, through the Agricultural Department.

As shown above, agricultural co-operative credit societies finance cotton cultivation of members by obtaining finance from co-operative banks. Taluka development associations mainly concern themselves with the propagation of best seed by arranging experimental plots or by undertaking supply of approved varieties of cotton seed with half credit facilities. The sale societies and unions undertake supply of seed out of advances provided for and sanctioned in kind and sale of cotton and other produce of members of societies, allowing facilities of accommodation against pledge of produce. The Cotton Central Committee, Bombay, has obtained and compiled information regarding cultivation, finance, and sale of cotton and during the last 4 or 5 years, has prominently interested itself with the propagation of the long staple variety known as the Bani-Comila variety introduced by the Agricultural Department. A competent staff has been engaged for propagation of this seed variety by the Agricultural Department out of a substantial grant placed by the Cotton Central Committee at the disposal of the Agricultural Department. Supply of seed to agriculturists without interest and on credit is also arranged by the Agricultural Department out of a similar grant allowed by the Cotton Central Committee. Indian mills are seen to vie with each other in purchasing cotton of this long staple variety at competitive rates.

We give below a statement of the total amounts of the loans granted by the Agricultural Co-operative Credit Societies and by the Sale Organisations in the last five years (in rupees):

	1929-30 Rs.	1930-31 Rs.	1931-32 Rs.	1932-33 Rs.	1933-34 Rs.
Aggregate advances to members of agricultural co-operative credit societies	55,57,314	29,93,064	11,51,231	6,21,057	14,48,995
Amounts of advances against cotton made by purchase and sale organisations	3,38,899	51,455	26,697	25,057	17,013
Amounts outstanding by way of advances against cotton at the close of each year	32,595	30,630	19,383	21,705	21,125

*Financing the Cultivation and Sale of Cotton
in Jalgaon District (East Khandesh).*

Cotton growers require money for manure, seed, weeding and picking purposes. Many growers depend upon the manure they get from their own cattle; comparatively few growers purchase manure from outside. Such growers pur-

chase manure from cattle in the village from non-cultivators. A very few growers purchase fertilisers, viz., ammonium sulphate, castor and groundnut oil cakes. For purchasing manure finance is generally made by co-operative societies. In a few cases, especially in non-societies villages, finance is made by sowcars. Security offered to societies and sowcars is personal coupled with that of sureties especially in case of societies. In a very few cases lands are taken in mortgage by sowcars when advancing loans for manure, but in such cases, money is advanced not only for manure but along with it for some other purposes, viz., purchase of bullocks and expenditure for marriage and funeral ceremony, etc. The lending rate of societies generally for all purposes ranges between 9 to 10 per cent. while that of sowcars is generally from 12 to 25 per cent. Loans in such cases are made repayable in a year.

Generally the majority of the cultivators have got their own cotton seed stored from the previous year's cotton; some cotton growers get money from co-operative societies; while some purchase seed from sowcars and pay the amount after 6 months; but in the latter case the rate of interest varies from 25 to 50 per cent. In a very few cases Taluka Development Associations sell seed on credit. These bodies sell good and selected varieties of seed; but in all other cases, especially in the case of purchase from sowcars, seed is of lower quality.

Generally a majority of growers do picking work with the help of the members of their family; some engage labourers to do this work. Comparatively small sums are required for the purpose of picking. The wages of labourers can be paid after a week or two; a small quantity of picked cotton is sold and from the proceeds wages are paid. This goes on till the whole picking is finished. In a few cases cotton growers borrow from sowcars for picking purposes and repay the amount after selling the cotton. But there is no tendency to sell cotton compulsorily to sowcars from whom a loan is borrowed.

Ginning in almost all cases is done by petty merchants, and in rare cases by cotton growers themselves. The majority of cotton growers sell raw cotton. In a very few cases cotton growers gin their cotton and then sell. Cotton growers do not undertake storage and transport of cotton at all.

Advances on the pledge of cotton are hardly taken by cotton growers. Sowcars do not make advances against cotton. There is no tendency on the part of growers to hold their stock and hence they do not take such advances.

Recently co-operative sale societies have undertaken the business of making advances on the pledge of cotton. The East Khandesh District Central Co-operative Bank also proposes to do some business on these lines; but so far this business is not progressing quite satisfactorily.

Cotton growers cannot regulate the sale and thus cannot support the price. There is no tendency on the part of cotton growers to hold stock and help to raise the price. Their illiteracy and ignorance about the sale organisations are a great hindrance in the way. Besides, trade depression has given a great setback to the growth of the idea of holding stock.

There are no special cotton sale societies in this district. There are sale societies started for sale of cotton, groundnut, jwar, etc. Such societies do not give any finance to their members. They sell their cotton on commission.

They give advances on pledge of cotton from 60 to 70 per cent. of the market value of the cotton. Selling members' cotton on commission and advancing against cotton is not yet sufficiently advanced.

Cotton Financing in the Central Provinces and Berar.

The cotton growers receive temporary advance for about 8 months from village primary co-operative credit societies at the rate of 10 to 12 per cent. per annum. The advances are made for purchase of seed, fertilisers, to meet expenses of weeding and picking. Advances for ginning stores and transport are not given at all.

There are no societies formed for the sale of cotton.

C. — *Egypt.*

The problem of financing cotton-growing interests Egypt from two points of view. In the first place cotton is the principal product of the country on which, in the main, its economic life and its power to make purchases on world markets depend. The figures given below, which relate to the crops of the last two years, show, in fact, how large a proportion the cotton exports represent in the total exports from Egypt:—

From 1 September to 31 August	Cotton exports	Total exports	Percentages
	Millions of £ E		
1932-1933	18.5	27.0	68.5
1933-1934	24.7	31.1	79.4

One can well understand, therefore, the close attention with which the Government follows the course of the production and export of this commodity and how, to defend the prices, the area under the crop has on several occasions since the war been restricted by law.

To the reason mentioned, which makes the financing of the cotton crop in Egypt a matter of public interest, may be added another, which renders it indispensable, and that is that the growers are for the most part devoid of means. In fact, besides cotton, the fellah cultivates one or other cereal; this may suffice to feed him and his family, and even, in good years, to enable him to pay his taxes; but it is on his cotton that he counts, in the main, for obtaining money. As, however, he can only convert the value into cash once a year, he depends, for the rest of the time, on the credit facilities which this prospective value enables him to procure for meeting the necessary expenditure for sowing, cultivating and marketing his crop (1).

(1) EDWARD COOK, Governor of the National Bank of Egypt: Financing the Cotton Crop. Changes in the Credit System. *The Manchester Guardian Commercial*. Manchester, 11 January 1935 (Special Egyptian Number).

This demand for credit has been, generally speaking, amply satisfied by the corresponding offer. But here, as has also been seen elsewhere, a variety of persons (1) play their part in getting cotton from grower to spinner:

(a) the broker who bridges the gap between grower and up-country merchant;

(b) the up-country merchant;

(c) the banker or spot commission agent in Alexandria (Minet-el-Bassal market);

(d) the broker at Minet-el-Bassal;

(e) the shipper;

(f) the Liverpool broker or agent.

Now, even if all the lots of cotton do not pass through this series of middlemen, a part of them must certainly do so, with the result that the grower's profit remains in the end greatly reduced.

However, during recent years, the exporters have shown the tendency to increase their direct purchases in the interior of the country and partially to eliminate, in this way, the function as middlemen of the small merchants.

The commercial banks also have been to a large extent replaced, in the financing of the operations of cultivation, by the Crédit Agricole d'Égypte, so that their branches are now less interested than formerly in this kind of financing.

The Crédit Agricole d'Égypte was created by Royal Decree dated 25 July 1931. Half of its capital was supplied by the Government which still gives it substantial financial aid.

This institution grants to the cotton-growers, loans of the kinds described below.

(a) *Advances in Seeds and Fertilisers.*

These advances are made both to large and to small growers—landowners, or tenants with the guarantee of the landowner—whatever may be area of the lands cultivated. The co-operative societies can also take advantage of these loans and benefit by a reduction of 5 per cent. on the prices charged to individuals for seeds and fertilisers.

The seeds are tested, before purchase, by the technical services of the Ministry of Agriculture, with a view to assuring their quality as well as their germinating power.

In like manner, the chemical fertilisers are analysed, before distribution, by the laboratories of the Ministry of Agriculture to assure their quality and their manurial value.

The quantities of cotton-seed as well as the quantities of fertilisers necessary for the cultivation of the cotton distributed since the establishment of the Bank were as follows.

(1) EMIN PASHA JEHIA: *Eliminating the Middleman. A Cotton Distribution Plan Examined.*

Ibidem.

Year	Seeds Ardebs (of 121 kgs.)	Fertilisers Metric tons
1932	69,951	4,644
1933	117,727	10,386
1934	163,332	36,282
1935	204,768	(1)

(1) Figure not yet available.

(b) *Advances for Cultivation and Picking Expenses.*

These loans are made only to small landowners owning not more than 90 *feddans* (the *feddán* is equivalent to about 4,200 square metres) on condition that the land tax which they pay on the whole of their lands does not exceed the sum of £E98,400. These advances are also made to the co-operative societies whatever may be the area of land held by their members either as owners or as tenants.

The amount of these advances is at present fixed at £E2 per *feddán*, payable in three instalments. The first instalment is of £E1 and is paid immediately after the sowing; the second is of half an Egyptian pound and is paid during the months of May, June and July, the period of gathering the eggs of the cotton-worm (*Prodenia littoralis*, Boisduval); the third, also of half a pound, is paid from August onwards, that is at the moment of the picking of the cotton. In the provinces of Upper Egypt where the plants are hardly at all attacked by the worms, the amount of these loans is paid in two instalments, the first of which is a pound and a half.

In view of the heavy attacks by the worms on the cotton plants in 1935 the Bank, as an exceptional measure, granted to farmers who were short of money an additional pound and a half per *feddán* under cotton in order to enable them to meet the necessary expenses for combating the attacks of the worms on their fields.

The advances in the form of seeds and fertilisers and those for the expenses of cultivation and of picking are guaranteed by the right of priority conferred on the Bank by Decree-Law No. 50 of 1930. The exemption from seizure laid down by Laws No. 31 of 1912 and No. 4 of 1913 is not valid as against the Bank when it is taking steps to recover sums due to it.

As a general rule, the Bank only arranges for the ginning of cotton pledged by its clients at their request. In this case, it recovers the cost of the ginning and transport of the cotton out of the proceeds of sale of the seed.

The loans for the expenses of the cultivation and picking of cotton granted by the Bank since its formation have been as follows:

Year	Amount of the Loans £ E
1931-32	7,481,279
1933	99,309,599
1934	480,596,912

(c) *Loans on the Pledge of Cotton.*

With a view to supporting the price of cotton on the market and, on the other hand, to facilitating the repayment of the loans in seeds and fertilisers and for the expenses of cultivation and picking which may have been granted to its clients, the Bank grants loans on the pledge of cotton.

The maximum quantity which the growers can give in pledge is fixed at 100 *qantars* (14,153 metric tons) of raw cotton and no limit is fixed for co-operative societies. However, an exception is made in favour of individuals who are debtors to the Bank or to the Government for taxes; such individuals can pledge quantities exceeding 100 *qantars* in order to be able to cover the whole amount of their debts.

The amount of these advances, granted only to farmers, represents 80 per cent. of the price quoted on the day of the transaction and is based on the variety and the grade of the cotton. However, if the prices fall while the loan agreement is in force, no additional cover is required of the borrowers. On the other hand, if prices rise during the period of the pledge and this rise proves to be more or less stable, the Bank makes supplementary loans to its clients in proportion to the increase in price in accordance with the special conditions laid down to this effect. The final loan account is only determined at the moment of the withdrawal or sale of the cotton pledged. The Bank's clients being cultivating owners it can recover any deficit in the event that the sale of the cotton pledged does not suffice to pay off the loan together with the interest and other expenses involved.

The period of these loans is three months, but they are renewable for another period of three months at the request of the clients and with the approval of the Bank. Nevertheless, no agreement for a loan on cotton can be renewed for a period ending on a date later than 30 April in each year, this being the latest date allowed by the Ministry of Agriculture for the ginning of cotton.

The cotton given in pledge is deposited either in the warehouses of the Bank, which are scattered throughout the towns and villages of the country and at present number more than 470, or in private warehouses belonging to the clients themselves and handed over to the Bank in the required conditions of safety, convenience, etc.

The loans granted by the Crédit Agricole d'Egypte since its establishment have been as follows:

Year	Quantities pledged Qantars	Amount of the loans £ E
1931-32	85,100	141,714.175
1933	470,825	817,988.431
1934	838,092	1,765,661.109

The rate of interest on the loans granted by the Bank was, up to 16 September 1933, 7 per cent. for individuals and 5 per cent. for co-operative societies. Always in pursuance of its desire to assist the farmers and to lighten the burdens laid upon them, on the one hand, by the economic and financial crisis which remained acute throughout the world, and, on the other hand, by the

collapse of the prices of agricultural products, the Bank, with the consent of the Government, decided to reduce the rate of interest to 6 per cent. for individuals and to 4 per cent. for co-operative societies, as from 16 september 1933, the interest on overdue loans being respectively 7 per cent. and 5 per cent.

D. — Other Countries.

U. S. S. R. — Cotton-growing has made considerable progress in recent years, so that it now assures the supply of raw material for the national cotton industry. In 1935 the area under cotton was 1,941,540 hectares, of which 101,040 hectares were planted by the *sovkhoz*, 1,731,700 hectares by the *kolkhoz* and 108,800 hectares by the non-collectivised peasants (individual cotton-farms). The crop anticipated is 1,404,910 metric tons of cotton, without counting the production of the *sovkhoz*.

In regard to this crop, the Soviet Government has adopted, amongst others, the following measures:

- (a) creation of an important collective cotton-growing system;
- (b) organisation of machine and tractor stations for the cotton-farms, serving them on the same conditions laid down by the agreements concluded with the *kolkhoz*;
- (c) stipulation by the State of agreements for the cotton of the *kolkhoz* and the individual cotton-farms.

In 1935 agreements relating to 1,404,910 metric tons of cotton were concluded on the following conditions:

- (a) delivery of seed on credit at the price of 48 roubles the ton;
- (b) price of the product fixed according to the quality as follows: American cotton, from 805 to 1,785 roubles the ton; Egyptian cotton, from 1,340 to 3,960 roubles the ton;
- (c) money loans, at 3 per cent. per annum, of 375 to 1,100 roubles per ton, granted: (1) at the conclusion of the agreement, 75 to 200 roubles per ton; (2) after the sowing, 150 to 450 roubles per ton; (3) after the second earthing up, 150 to 450 roubles per ton;
- (d) cottonseed oil, cottonseed feeding cakes and cotton-wool sold by the State at reduced prices in the proportion of 10 kilogrammes of oil to one ton of cotton, 20 kgs. of feeding cakes to one ton of cotton, and 20 kgs. of cotton-wool to one ton of cotton;
- (e) in the event of the delivery of cotton in excess of the quantity stipulated, such excess to be paid for, according to the crop, at from 1 ½ times to 3 times the price fixed.

The cotton growers also obtained other facilities.

In several regions the cotton crops are exempted from the agricultural tax, and in others they are taxed at the same rate as the cereal crop, in spite of their greater return.

Chemical fertilisers are delivered to the *kolkhoz* on credit, for two years, at the following prices: nitrogenous fertilisers, 130 roubles per ton; phosphatic fertilisers, 67 roubles per ton.

The prices of chemical fertilisers are fixed below their cost of production. The difference between the cost of production and the selling price, as well as the cost of transport, are covered by the People's Commissariat of Finances out of the State Budget of the U. S. S. R.

The Government bears all the cost of cultivating special varieties of cotton for seed. The annual expenditure incurred for this purpose amounts to nearly 13,000,000 roubles. The State spends large sums for the irrigation of the cotton-farms. In 1935 142,757,000 roubles were spent out of the State Budget for the construction of a net work of irrigation canals and 4,200,000 roubles were spent for the institutions for scientific research into the cotton industry (1).

China. — No information is available on the financing of the growing and marketing of cotton. It is to be noted (1) that in October 1933 the National Economic Council established a Cotton Industry Commission which in addition to the planning for the development and improvement of the Chinese section of the spinning and weaving industries, is also engaged in the task of rationalisation of the cotton-growing industry. This includes not only improvement of quality, standardisation and inspection work, but also development of co-operative marketing.

Cotton co-operative marketing societies, which would provide cheap credit and efficient marketing service, are sponsored by this Commission. In this task the Government has the co-operation of banks.

But in China, apart from the financing which the individual growers may require, there is need of credit on a much larger scale in view of the necessity of removing serious obstacles to cotton expansion, that is, the poor transportation facilities, and the excessive freight charges, which account for the abnormal increase of nearly 300 per cent. in the selling price of cotton. Together with provision of cheaper credit to the growers might also be introduced more rational methods in the application of fertilisers; as the continued employment of fertilisers rich in nitrogen and poor in potash and particularly phosphates have—it was stated—an unfavourable effect on cotton yields. But, obviously, the improvement of the yields under conditions of very small peasant farming with extreme fragmentation and scattering of holdings, is bound to be a gradual process.

Argentina. — The merchant advances to the farmer the sums of which he has need for cultivation expenses—excluding fertilisers which are not employed—and for the expenses of picking and transport. Ginning is not carried out by the grower, who sells the product in the raw state. The merchant does not receive any interest on his advances but takes a lien on the products; the farmer, in his turn, pledges himself to deliver the cotton gathered to the merchant at the local market price on the day of delivery.

For the crop of 1935 the Bank of the Argentine Nation for the first time granted loans to producers, merchants and ginneries of cotton up to a maximum

(1) Information extracted from a statement supplied to the International Institute of Agriculture by the Central Agricultural Bank of the U. S. S. R.

(2) *The World Cotton Situation. Foreign Cotton Production.* United States Department of Agriculture. Bureau of Agricultural Economics. Washington, D. C 1935.

of 50,000 pesos for each firm, at 6 per cent. interest. The borrower can obtain on cotton already sold and loaded 80 per cent. of its value and for cotton consigned to the specialised firms up to 70 per cent. of the value, in both cases against presentation of the railway consignment note or the bill of lading.

The exporters advance large sums to the ginning mills and to certain merchants at an interest of 7 to 8 per cent., against agricultural pledge or on mortgage of machines or buildings. The repayment of such loans usually takes place at the end of the harvest.

The National Cotton Council (*Junta Nacional del Algodón*), established by a Decree dated 27 April 1935, was instructed to carry out the necessary studies for the drawing up of regulations which, taking account of the requirements of cultivation and of technical and commercial requirements, may make it possible to direct cotton production towards the types best adapted to each region, to supervise ginning technique, to control the commercial classification of the fibre and to fix the typical variety of Argentine cotton, all in harmony with the usages of the international market. Besides facilitating the purchase of selected seed and the propagation of such seed in suitable fields in the various cotton-growing regions, the Council will encourage the formation of co-operative societies for the purpose of facilitating the direct sale of cotton by the growers themselves.

Brazil. — The expansion of cotton-growing finds an obstacle in the scarcity of capital, particularly amongst the small growers and in the lack of an organised credit system for the purpose of making loans to the growers and for the marketing and handling of the crop.

Credit is usually supplied by the owners or operators of ginning establishments, or by the small merchants and buyers of cotton in the interior towns. But there is a growing tendency on the part of the large cotton exporters in the coast towns to rediscount the loans of the ginners and small buyers, thus enabling the latter to extend credit to a larger number of growers.

In São Paulo, which is on the way to becoming an increasingly important centre of the cultivation and export of cotton, keen interest is being taken at present in the question of financing. In preceding years the cotton manufacturers often granted loans to the growers on the security of the crops, and since the crops were not large, the financing of them did not offer great difficulties. But in 1933 and in 1934 the cultivation of cotton assumed a marked development; the crops were respectively 34,000 and 105,000 metric tons and the available means of financing them were not sufficient to support this increase of production. The cotton-growers and cotton merchants are, accordingly, now endeavouring to promote a better organisation of credit for cotton, insisting that the *Banco do Brazil*, together with the large banks of the State, should set up a bank for cotton, from which the growers and merchants could obtain personal credit and mortgage credit.

Turkey. — Credits to producers and exporters of cotton are granted by the Agricultural Bank of Turkey. These credits are granted in two forms:—

(a) The first consists in opening credits to farmers against a mortgage guarantee or against the guarantee of the joint and several security of the

producers of an agricultural village. The amount of the credit is calculated in relation to the cultivated area and to the cost of production per hectare.

In the course of the year 1935 the Agricultural Bank opened a credit of £T210,000 to the growers in the cotton regions of Adana and Tarsus.

Formerly when the price of cotton was high the credit granted per cultivator might be as high as £T500. Since the fall in price the maximum credit has been £T350.

However, the growers who give both a mortgage guarantee and a joint and several guarantee may obtain a larger credit.

(b) The Agricultural Bank also grants facilities to producers, merchants or exporters in the form of advances on the security of cotton, with a view to enabling them to await a favourable market.

The credit is fixed as a percentage of the estimated value.

The Bank also gives credit on the security of documents, thereby enabling the exporters to discount the value of the cotton exported.

Taking account of the general conditions of the cotton market and of banking expenses, the commission charged by the Bank varies from 9 to 12 per cent., but never exceeds 12 per cent.

However, the Bank charges a lower rate of interest on loans to agricultural co-operative societies.

Uganda, Tanganyika and Kenya. — In respect of cotton-growing these three countries have certain common characteristics (1). In all of them cotton-growing is carried on with the assistance of the Government and the growers are almost exclusively natives. It may be said that no real system of financing the cultivation and sale of raw cotton exists. There is no land or agricultural bank in Uganda, nor in Tanganyika. The Land and Agricultural Bank in Kenya was established to help the European settlers and farmers; it does not afford any aid to natives. Again, there are no co-operative societies organised by cotton growers in any of these Territories.

The Uganda Cotton Ordinance of 1926—amended to the 31st May 1934—provides Rules and Regulations governing the industry and, with minor adjustments or differences to meet local circumstances, has been adopted by Kenya and Tanganyika.

The sphere of the native is limited in practice to:

- (1) preparation of land; fertilisers have not been used so far, the available land being generally sufficient to allow for shifting cultivation;
- (2) planting and picking; picking is done entirely by the cultivator and his family and is unassisted by any advance;
- (3) transport to a ginnery or market;
- (4) the sale of the seed cotton to a ginnery or market.

In Uganda cotton seed for planting purposes is requisitioned by the Government from the ginneries and supplied free to the growers. There is a buying

(1) In the Uganda Protectorate the cotton crop forms approximately 90 per cent. in value of the export trade; in Tanganyika it is of minor, but growing importance, but in Kenya of little importance, and is there practically confined to the districts bordering Uganda.

season of some 3 or 4 months and the cotton is marketed at fixed markets and at ginneries. Cash is paid by the ginners to the growers at the time of purchase.

Also in the Tanganyika Territory cotton seed for planting purposes is supplied free by the ginners. Crops are inspected from month to month during the period in which they are maturing and advances are made in normal cases at the rate of 5s. per hectare per month to the time of picking, to a total of from 20s. to 30s. per hectare, depending on the standard of the crop as regards quantity and quality and on the current level of prices. The grower pledges his crop to the ginner, who holds the cotton until such time as it is sold or the advance repaid. No interest is charged to natives but 9 per cent. per annum is charged to non-natives.

Seed cotton is offered to and bought by the ginner, who exports and sells the lint cotton in the most advantageous markets abroad. In some cases growers prefer to gin their crops under agreement with the local ginner and consign the resultant lint to a broker abroad for sale on commission. This system is not generally followed, as the grower has to bear all costs of shipment, dock dues, insurance, storage, etc. (this latter item of storage might assume considerable proportions in the event of a ready sale for the cotton not being obtained) and there is no guarantee that he will be able to sell his cotton at more advantageous prices than can be obtained locally from the numerous lint buyers.

Advances are made by private firms. There are no co-operative societies for the sale of cotton.

The cultivation of cotton in Kenya is carried on entirely by natives working on their own account. Individual titles to native land rarely exist and cultivation is carried out by family labour.

The seed cotton is purchased for cash by privately-operated ginnery companies, adequately financed from private sources. The ginnery companies collect the seed cotton at well-distributed buying points. No need is felt, therefore, for provision of credit facilities. The growers are, however, assisted by the distribution of cotton seed of improved varieties, at the expense of the ginnery companies.

Certain measures are also under contemplation with the object of ensuring that the growers receive an equitable proportion of the value of the ginned cotton.

There is no system of supporting the price in the market, but competition is usually so severe as to ensure a full price being paid to the grower.

Wherever "pools" are in force (and they are now general) a minimum price is made public, but there is no maximum limit. Every buyer must exhibit on a board the price he is prepared to pay; this is generally exceeded, so that on the whole the native is well protected.

With regard to credit facilities with a view to the export of the product, some of the more substantial houses have open credits arranged in England or Bombay. The most usual method is for the ginner to obtain advances from an exporter for delivery of a certain quantity of cotton. The security demanded for the advance and fulfilment of the contract is dependent on the

standing of the ginner; in some cases security is not asked for or given. Other firms obtain advances from Banks by hypothecation of assets, or on the daily or weekly declarations of their purchases of seed cotton, which are pledged to the Bank. In the latter case the proceeds of any sale of baled cotton are paid to the Banks to satisfy advances, and in the case of direct export, documents, *i. e.*, railway receipts or bills of lading, are handed to the banks. It is hardly necessary to state that the banks see to this (1).

Anglo-Egyptian Sudan. — This country is in a completely different category from Uganda, Kenya and Tanganyika Territory.

The systems of financing the cultivation and sale of the cotton crop in operation fall into 3 main groups:

(1) In which either Government or concessionaire companies make cultivation loans to native cultivators, and take over the cotton crop, gin, transport, and sell it, and eventually account to the cultivator, recovering loans plus interest at 5 per cent. from proceeds of sale.

(2) In which Government buys the crop outright, at a price fixed annually in accordance with current market prices, from the native cultivator, gins, transports and sells, covering its purchases in the field by selling futures on the Liverpool market.

(3) In which the cultivation of the crop is financed by native commercial interests entirely. This system applies to the Tokar Delta only. Loans to cultivators are made by cotton brokers who are secured by handling the borrowers' cotton when it is sold by public auction in the Tokar market. The latter is controlled by Government, which takes a fixed percentage of the proceeds of sale in respect of supervision, rent and free seed issue.

In the case of group (1) Government and/or concessionaire companies cover their advances to cultivators by operations on the Liverpool futures market. Government and/or concessionaire companies receive remuneration in respect of the services they render, *e.g.*, supply of irrigation water, upkeep of canals, supervision, research, etc., in the shape of a fixed percentage of the net proceeds of the sale of the cotton crop. Food and fodder crops are the sole property of the cultivator and are not the subject of loans by Government or concessionaire companies.

Hitherto the co-operative movement has made no progress in this country; efforts to initiate it, started by Government in the Tokar Delta in 1925, have now been abandoned for the time being, as not being likely to achieve a practical measure of success.

Belgian Congo. — In this colony cotton-growing is carried on exclusively by the natives under the system of compulsory cultivation. It is supervised, advised and inspected by the agricultural services of the Government, which supplies the seeds to the native growers.

(1) The information on the financing of cotton in these three territories has been supplied to us by the respective Departments of Agriculture and by the British Cotton Growing Association (Manchester).

In compensation for the obligation to grow cotton, the native has the guarantee that his crop will be purchased from him by the cotton company which owns the purchasing district in which the native offers it. Even if, for any reason, the cotton is not bought by one or other of the companies, the Government of the Colony will purchase it.

In addition, the minimum price to be paid to the native is fixed annually by the Governor General.

In regard to the implements used by the natives, they are, in most cases, distributed gratuitously by the cotton companies in the form of encouragement premiums.

The cotton companies which are the owners of the ginning mills and of the purchasing districts also undertake the export of the cotton.

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THE ORGANISATION OF THE INTERNATIONAL TIMBER MARKET

The Convention made on 15 November 1935 at Copenhagen between the representatives of the timber exporting industries of the principal European countries concerned, and ratified by the contracting countries and accordingly coming into force from 1 December 1935, constitutes a very important event in the history of timber economy. It is in fact the first time that the contracting countries have formally undertaken to observe the fixed quantities of timber exports as limits of the offers to be admitted for each country respectively over a given period (1).

In order to gain a correct idea of the importance of this agreement, of which more will be said later, it may be useful to survey rapidly the international activity of recent years the object of which was to remedy the serious crisis which has affected the timber market since the end of 1920.

A brief mention will suffice for the international congresses which from 1900 up to 1931 dealt expressly with the timber problem, the principal being: the International Congress of Sylviculture at Paris of 4 to 7 June 1900, the International Forestry Congress at Paris from 16 to 20 June 1913, the International Timber Conference at Bratislava from 31 August to 1 September 1923, the International Timber Congress at Lyons from 29-31 October 1924, the International Congress of Sylviculture in Rome from 29 April to 5 May 1926, the Second International Timber Congress at Bratislava on 30-31 August 1929, and the International Congress of Timber and Sylviculture in Paris from 1-5 July 1931 (2).

These meetings undoubtedly contributed in varying degrees either directly or indirectly to bringing the problem of the international regulation of the timber market nearer its solution, more particularly by outlining the idea of an international collaboration and by preparing the ground for schemes of collective action. None the less, from the point of view with which we are here concerned, they did not attain to the practical importance of the later meetings with which it is here proposed to deal, and which form, so to speak, an organic and progressive whole.

(1) *L'Economie internationale. Revue de la Chambre de Commerce internationale*, janvier 1930. — *Internationaler Holzmarkt*, Vienne, 14 December 1935.

(2) CRESPEL, Paris. *Le marché du bois et son organisation internationale*. Paris, 1933, pp. 71, 154.
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To examine first the situation in the timber trade as it was at the time when the first definite steps in the direction of international organisation of this market were taken, and further to investigate the most evident causes of the crisis in respect of timber as they emerge from the report of the Delegation of the Economic Committee of the League of Nations relating to the meeting of timber experts held at Geneva from 25 to 27 April 1932.

The serious overproduction crisis which for some years past had affected the world economy had also made itself felt in relation to silviculture.

The demand for timber has continued to increase in the last decades along with the growth of population. Other factors had stimulated this demand in the course of more recent years to an even higher pitch; among such contributing factors may be mentioned the reconstruction work in the devastated regions, the necessity for repairing or renewing buildings, plants, railways, mines and all else which had been bound to be neglected during the war, also the new requirements of comfort, and the greatly increased consumption of paper, cellulose and artificial silk.

Starting from 1930 there was on the contrary evident a marked restriction of the consumption of timber. England which has always been the principal importing market and has consequently regulated prices, reduced imports of sawn timber from 9,137,000 cubic metres in 1929 to 8,633,000 in 1930 and to 7,608,000 in 1931. In Germany the imports of resinous timber fell from 7,930,000 tons in 1928 to 5,008,000 tons in 1930 and to 2,845,000 in 1931. In Italy the imports of sawn, round and squared timbers which in 1927 amounted to 1,684,000 tons, fell to 1,542,000 in 1930 and to 1,141,000 in 1931. This fall has been attributed mainly to the economic crisis, as the timber market is intimately connected with the general prosperity. The crisis does not merely affect the activity of the building industries (partitions, planks, doors and windows, etc.) and of the furniture industry, with the quantity of packing material in demand, but also the activity of ship building, railway and mine construction, etc.

Other factors have contributed to this process. Among these are the remarkable reduction in the dimensions of modern buildings and apartments, as well as the marked progress made at the expense of building timber by other materials, such as cement, iron and steel, plaster, bricks, etc. Wood is increasingly replaced by iron and reinforced concrete as material for the construction of buildings, bridges, etc. The use of metal furniture is on the increase. Less timber is used in mines; a thinner type is in use and some shafts are concreted. The various applications of plywood make it possible to utilise wood at a much reduced volume: for purposes of resistance a ply 3 mm. in thickness replaces a plank 12 mm. thick.

On the other hand Russia which before the war had been the principal supplier of timber in Europe but which since then had ceased to export, had reappeared on the market; from 1927 its export increased rapidly; in 1931 Russia supplied 20 per cent. of the world export with 955,000 timber standards.

In several other countries the stoppage of the Russian exports had stimulated the production of sawn timber, and these, in consequence of the reduced con-

sumption and of the renewed Russian exportation, found themselves faced by serious difficulties in marketing their excess production abroad. Finland which had exported 1,278,000 standards in 1927, exported 900,000 in 1930 and 780,000 in 1931. Sweden which had exported 1,181,000 standards in 1929, exported 996,000 in 1930 and 729,000 in 1931. The same had occurred for the other exporting countries.

The situation was rendered still more serious by the continued fall of prices which had not been checked by the diminution of exports. Prices taken as a whole represent only half and less even of what they were before the crisis; in many cases they have become less than the costs of transport, transformation and consignment of the rough timber from the forest.

Not only has the consumption capacity of timber diminished still more than the quantity available but the export possibilities have been reduced of late in consequence of the restrictive measures adopted by various countries, with the object of protecting their national production against the depreciation of prices. Exporters have lowered their prices further, whether in order to surmount the barriers of increased customs duties, or so that they may keep abreast of a keen competition within the narrow limits of the quotas imposed by the importing countries. The quantities unsold in consequence of the exhaustion of insufficient quotas, have exercised an increased pressure both on the market of the exporting country and also on the markets on which this country has attempted to sell its surplus timber (1).

The International Conference of Timber Exporters held at Warsaw on 25-26 June 1931 was of opinion that the principal cause of the timber crisis, as that of the crises affecting other economic spheres, lay in the disparity between supply and demand on the world markets, and that the efforts made singly up to the present by the exporting countries with the object of relieving the crisis had had no appreciable result on account of the want of co-ordination in the means employed; the crisis could only be met by an international policy agreed between exporting countries, a policy which should lead to a stabilisation of the market without injuring the interests of importing countries, of importers and consumers of timber, and in such a way as to be compatible with the appropriate economic conditions of the exporting countries.

The members of the Conference added that they considered that the contracting countries would be able to contribute to a remedying of the situation if they would agree to fix for a period of several years their quotas of the total of exports (exports destined for the Far East not to be taken into consideration). In addition the agreement should, in the opinion of the members of the Conference, include all soft woods; sawn, planed, and cut for the purpose of making cases, as well soft timber in the round, sold abroad for shaping, etc. During the period of the agreement in question, the representatives of the contracting countries would be obliged to determine each year before 1 July and in accordance with the market situation in the importing countries, the total of the exports which were to serve

(1) Economic Committee of the League of Nations. The timber problem. Geneva, 1932, p. 6.

as basis for the calculation of exportable quantities for each country during the following year. After having submitted a recommendation in respect of statistics and having expressed the desire that the countries not represented at the Conference should be invited to associate themselves with this policy, the Conference expressed the opinion that such a programme could be executed only if in each of the countries taking part in the agreement an appropriate export organisation supervised the carrying out of the joint export policy. Naturally each country should be free to choose the form to be given to its own organisation and to regulate the relations existing between such organisation and the exporters (1).

The experts meeting at Geneva in April 1932 and belonging to Germany, Austria, Canada, Finland, France, Great Britain, Italy, Latvia, the Netherlands, Poland, Rumania, Sweden, Czechoslovakia, the U. S. S. R., Yugoslavia, with the collaboration of the International Institute of Agriculture represented by several of its officers, examined the means which could be employed on the international plane for remedying the situation.

The report, after noting the impossibility of increasing the demand, also recognised the impracticability of effecting an agreed limitation of fellings in the existing state of affairs. It was very difficult to intervene in the forest policy of any country and the States with large timber resources refused to consider the question, in view of the development of their national economy and of their home consumption. Besides there would be no way of enforcing international control over the limitation of fellings. Such a measure however, if realisable, would not only tend to remedy the crisis but also to reduce the shrinkage of forest reserves which has caused anxiety for some time past to economists. The crisis which has affected the timber industry has in fact a somewhat paradoxical character. On the one hand there is an overproduction in quantity which oppresses the market; on the other hand there is a world consumption of timber which, reduced though it is by the general economic depression, remains, as is generally admitted, in advance of the possibilities of the natural increase of the forests which can be economically worked. In this way a continual diminution in the forested areas is going on and the average production capacity is also becoming lower in the forests which still exist. The classic works on silviculture state that out of 1,500,000,000 cubic metres representing the world consumption, 1,000,000,000 only comes from normal fellings, and that one third of the consumption 500,000,000 cubic metres is obtained by drawing on the forest capital. It has been said that in present conditions the timber crisis would find a solution if there were means of bringing about throughout the world the triumph of the principles of a scientific forest economy and if a stop could be put to the irrational exploitation of the "timber capital." The recommendation was made in the Committee of Experts that the International Institute of Agriculture should give the fullest consideration to this question and should take steps to group all the documentation necessary to the clear perception of the possibilities of an international

(1) GLESINGER E. *Le Bois en Europe*. Etudes d'économie internationale. Paris, 1932, p. 239.

convention, the object of which would be to ensure the respecting of the principles of a scientific forestry exploitation in all the European and extra-European producing countries.

However, as already stated, in the present state of affairs, an agreed limitation of fellings would be impracticable in application. The experts of the exporting countries represented at the meeting were unanimous in the opinion that in default of a restriction of forest workings, a regulation of exports might contribute to the relief of the market.

In fact if in normal times, according to the opinion of certain experts, the principle of free trade alone can ensure the prosperous development of the international timber trade, on the other hand in a period of crisis, the unlimited freedom of timber exports has as consequence the aggravation of the existing want of equilibrium, the lowering of prices, tendency for stocks to lose value, the disorganisation of timber production and of the trade in timber. Efforts have been made to counteract this price lowering. Certain countries have recognised the dangers that threaten the timber market, and have reduced their production at the base by a limitation of fellings, others have tried to regulate demand by agreements made between exporters. On the national sphere, powerful and well disciplined organisations have been formed and have carried out a reduction of exports in their respective countries. All these efforts however display a lack of co-ordination which, *inter alia*, has so operated that while certain countries reduced their production or subjected it to a quota policy, others increased their production.

In the course of the meeting, the experts of the exporting countries stated that their countries possessed or could easily establish central organisations which could in their name take part in an international arrangement of a commercial character, and they came to an agreement on a series of points:—

(a) They were of opinion that the only means of immediate assistance lay in the adaptation of the exports of all the exporting countries to the absorption capacity of the importing countries, equitably established on the basis of a cordial understanding. This adaptation should be defined by means of a percentage and should besides correspond to the actual import needs of the consuming countries.

(b) For estimating the consumption requirements, the basis taken should not be theoretical figures, but rather the statistics of recent years; in view of the existing situation, the estimates should also be reduced by a "crisis percentage" to be determined.

(c) In order to fix the percentages to be reserved on the exports of the different countries, the special conditions of the producing countries and of the national timber industries should be taken into consideration.

(d) In order to fix the quotas of distribution and the quantity to be introduced into the importing countries, purely commercial negotiations should be initiated between the exporting countries concerned. The collaboration of the importing countries concerned is essential to the satisfactory conclusion of these negotiations.

The experts of the exporting countries of Northern Europe expressed their willingness to initiate immediately between themselves negotiations of a commercial character for the regulation of questions relating to timber pending among them. The experts of U. S. S. R. have undertaken to recommend to the Soviet export organisations to take all possible steps in view of the conclusion of commercial agreements with the export organisations of other countries.

The experts of the Central European countries considered that the ideal would be a general agreement for which the agreement between the Northern States would form a preparation of much importance. If however there would be found to be insurmountable difficulties in the way of such a general agreement, the States of Central Europe were of opinion that it would be of advantage to arrive at an understanding among themselves. In any case they resolved to organise, on 9 June 1932, at Vienna, a meeting to which there should be invited all the countries concerned, represented or not at the meeting of experts just reviewed (1).

We thus come to the International Timber Conference held at Vienna. At this Conference there took part: Germany, Australia, Belgium, Spain, the United States, Finland, France, Greece, Hungary, Italy, Latvia, the Netherlands, Poland, Rumania, Sweden, Switzerland, Czechoslovakia, the U. S. S. R., Yugoslavia who all sent experts; Sweden, Italy, Greece and Hungary sent observers only, and Great Britain was not represented. The main object of the Conference was to ascertain which countries were prepared to submit voluntarily to a reduction in production and export of timber, so as to establish an equilibrium between supply and demand and to render possible remunerative prices.

In the course of the discussions there were evident marked differences of attitude. At the same time from the beginning, six countries, Austria, Latvia, Poland, Rumania, Czechoslovakia and Yugoslavia showed themselves favourable to an arrangement which was supported by France.

The positive outcome of this meeting was an understanding between the countries enumerated above, with a view to undertaking a joint action with the object of remedying the international timber market and of ensuring a limitation of exports so as to re-establish the equilibrium between supply and demand. They decided upon the formation of a permanent committee designed to secure the continuity of the work carried on. The agreement was to remain open for the signature of the national organisations of other countries who might desire subsequently to adhere to it (2).

The Permanent Committee, formed by the so-called States of Central Europe with headquarters at Vienna, assumed the name of the International Permanent Committee of the production of timber, the timber industry and trade in timber (C. I. B.). This body constitutes also for the northern countries a first step in the direction of the international organisation of the timber market. Sweden,

(1) Economic Committee of the League of Nations, document quoted, p. 9.

(2) *L'économie internationale*, already quoted, October, 1934, p. 5. Economic Committee of the League of Nations. Document E 854 of 30 June 1934.

Finland, the Baltic States and the U. S. S. R. have however as yet not joined. France became a participator in the C. I. B. from 1933. The activity of this organisation is mainly exercised in three spheres: (a) technical operations, (b) regulation of the market, (c) inter-European timber policy. (1)

The action taken by these countries soon bore fruit. In December 1933 an International Conference of Timber exporters was held at Berlin, and under the presidency of Count Ostrowski, president of the C. I. B., resulted in an agreement in respect of timber exports.

• As the outcome of the exchange of views among experts, this Conference had been instructed to draft on the basis of statistical data a common policy for the export of timber during the following season.

The negotiations were carried on between, on the one hand, well known leaders in the timber trade of Sweden, Finland and the U. S. S. R., and on the other the principal delegates of the exporters' organisations, members of the C. I. B.

In the first place an agreement was reached as to the estimate of the world demand of the importing countries for 1934; this demand was estimated at 4,200,000 standards. Then the representatives of all the countries present declared that they would endeavour to secure that the exports of sawn timber of their country should not exceed in 1934 a fixed number of standards. The total of these quantities to be exported was in complete agreement with the total figure estimated for the importations.

This "gentlemen's agreement" between European timber producers, members of the C. I. B., from which however Sweden and France abstained, resulted in a certain stability of the price of timber on the world markets (2).

At the end of October 1934 a second conference of timber exporters took place at Vienna, under the presidency of Count Ostrowski. This meeting was the direct continuation of that held in Berlin in 1933 but the basis of operation had been considerably widened, as the number of European States represented at Vienna was augmented by the participation of the Baltic States. There was thus represented 99 per cent. of the total production of the European exporting countries. It should be added that a representative of Canada took part in the Vienna meetings; this country since the Ottawa Conference has become one of the most important suppliers of timber to Europe. (3) Hence with the exception of the United States, Norway and Lithuania, representatives of the timber export of the world were present together at Vienna.

The Conference proceeded to the estimation of the imports and exports relating to 1934 and to the great satisfaction of its members it was confirmed that not only had the estimates of the volume of the world imports in soft wood made

(1) L'économie internationale, already quoted, October, 1934, p. 5. Economic Committee of the League of Nations. Document F 854 of 30 June 1934.

(2) L'économie internationale already quoted. October 1934. Economic Committee of the League of Nations, document E 871 of 18 January 1935.

(3) *Internationale Holzmarkt* of 27 October 1934.

at the Berlin Conference proved to be exact, but that the "gentlemen's agreement" had secured excellent results for as its outcome the world prices of timber had shown—in contrast to the preceding years—a remarkable stability with a slight tendency to rise.

The Vienna Conference was continued on these lines. After an exchange of views on the probable extent of the demands of the different markets in 1935, those taking part in the Conference, after making an enquiry into the importing markets, pronounced in favour of the establishment of a new approximate figure lower by 10 per cent. than the total of the imports for 1934. In consequence the Conference recommended all the timber exporters to reduce their future timber export in the same proportion. This resolution does not imply any compulsion. But just as the Berlin agreement, in spite of its purely optional character, has been strictly observed by the adherents, it was possible to cherish a legitimate hope that the same destiny would be that of this Conference.

It should be noted that the Baltic, Russian and Swedish delegations, emphasising the solidarity of the interests of all timber exporters, have promised their loyal collaboration to the execution of this arrangement. The Canadian observer announced the approaching establishment in his own country of a central organisation for timber export, and also promised that in the near future his country would participate in these agreements (1). In addition this Conference, after having passed resolutions in regard to the standardisation of squared timbers, to the organisation in February at Warsaw of an international conference on the subject of wood used for paper manufacture, and finally on timber statistics, was unanimous in declaring that meetings of the same kind as those of Berlin and Vienna should be held at least once a year. On the proposal of the Swedish delegation, the President of the Conference has been authorised to place himself in touch at any time with the delegations of the other exporting countries and to invite them to discuss any question which it might be necessary to consider.

In virtue of this advisory arrangement it is open to all competent organisations to come in and adopt a line of joint action whenever required by the situation (2).

We now come to the Convention signed at Copenhagen on 15 November 1935 by the representatives of the timber exporters of the principal European countries concerned, which constitutes a remarkable advance on the agreements concluded at Berlin and Vienna.

By this agreement, the contracting countries for the first time enter into a formal undertaking to regulate the European trade in sawn timber and to establish in this way the bases for a steady development of the market. Such was the fortunate outcome of the intensive and persistent labours that had been carried on.

(1) *L'économie internationale* of January 1935.

(2) Economic Committee of the League of Nations, doc. E 871 of 1 January 1935, p. 5.

The Baltic States, Norway, the United States and Canada do not belong to the Convention but estimates have been reached of the exports of these countries and are taken fully into account in the agreement.

The total exportation for the countries participating in the Convention has been fixed for 1936 at a maximum of 3,850,000 standards which cannot be exceeded. The distribution of this maximum established between the different countries is as follows:

Austria	275,000 standards
Finland	1,005,000 »
Poland	313,000 »
Rumania	223,000 »
Sweden.	820,000 »
Czechoslovakia	96,000 »
U. S. S. R.	950,000 »
Yugoslavia	168,000 »

Total 3,850,000 standards

This Convention was ratified by the contracting States and therefore came into force as from 1 December 1935.

At the beginning of December Rumania had not as yet ratified the Convention but it was expected that this would be done at any moment.

According to statistics published by the C. I. B. for 1934, the proportion of sawn timber exported by the contracting countries comes out at 4 per cent. for Austria, 19 per cent. for Finland, 6 per cent. for Poland, 5 per cent. for Rumania, 16 per cent. for Sweden, 2 per cent. for Czechoslovakia, 18 per cent. for the U. S. S. R., 3 per cent. for Yugoslavia. The proportion of exported sawn timbers from European countries not taking part in the Convention reached one per cent. for Estonia, 3 per cent. for Latvia, one per cent. for Lithuania and one per cent. for Norway. Overseas countries exported to Europe as follows: Canada 11.5 per cent. and the United States 9.5 per cent. of the total amount of their respective sales.

The Permanent Executive Committee has been established, representing the associations which subscribe to the Convention. The Committee consists of six delegates, three appointed by Finland, Sweden and the U. S. S. R., and the remaining three jointly appointed by Austria, Poland, Rumania, Czechoslovakia and Yugoslavia. In addition a technical Committee was instituted to undertake the supervision of the operation of the agreement; on this Committee each country has the power of representation by a single delegate.

SOME OBSERVATIONS CONCERNING FARM ACCOUNTANCY METHODS IN THE UNITED STATES

The idea of farm accountancy is gaining ground in the world. It is finding acceptance in a number of countries which up to now had remained outside the movement. The "Lavoro Fascista" of 7 May 1933 speaks at length of "a realisation of the Fascist union of produce sharing tenants; the obligation on the tenant farmers to keep regular accounts." In confirmation of the rules of the Civil Code in respect of accountancy, Fascist syndicalism has decided to render obligatory on the tenant farmers the keeping of accounts, as well as the regular closing of accounts. In "La Vie agricole et rurale" of 1 December 1935, M. Abel Beckerich writes: "Let us establish Farm Accountancy Offices, French farmers", he adds, "are under the necessity of keeping books in order either to produce the evidence which they may be required to present, or to have the means of protecting themselves against taxation, if required." This has been secured for some time past to Swiss farmers by the excellent working of the Accountancy Office of the Secretariate of Swiss Peasants, at Brougg. M. Beckerich continues: "Only the systematic keeping of accounts can provide the material which, each farming year, will supply the exact picture of the economy of the farms. To secure this, however, general principles have to be laid down for the keeping of accounts among agriculturists, identical methods followed and complete control established." The association, or the syndicate, in M. Beckerich's judgment, are the organisations which should indicate a method and provide for control. "These bodies will draw up the accountancy scheme and while under the seal of secrecy making examination of the essential books, will be able to extract therefrom the figures which are the measure of the general situation of the rural economy of the region." In France, the Central Farm Accountancy Office of Soissons, examines already more than 100 accounting statements, and is thus in a position to give precise information on the economic level of the farms of the Parisian basin. The Central Accountancy Office established in the Rue d'Athènes, Paris, compiled in 1935 a documentation referring to 300 farms. The Accountancy Office of the Federation of the Agricultural Associations of Central France, at Blois, in Loir-et-Cher, has also begun to function regularly.

In the United States of America, there is a large number of Farm Accountancy Offices. Through the medium of the Bureau of Agricultural Economics at Washington, the International Institute of Agriculture has recently received an important contribution on the subject for 1932, 1933 and 1934, as shown by the table subjoined.

Other information is still to reach us. The number of farms of which the accountancy results for 1934 will be available will be considerable, and it may be hoped that this number will become still larger and that further information will reach us from other States of the American Confederation. The 87, 145 and 154 farms of Iowa are not representative of the economic conditions under which agriculture is carried on in that region.

Regions	Number of farms under review		
	1932	1933	1934
Michigan	—	795	793
Illinois	1,314	(1) 150	1,548
Iowa	87	145	154
Indiana	710	656	790
Ohio	—	—	632
Tennessee	—	—	315

(1) Average of 150 farms in 1931-33.

It is proposed in this article, to study from the methodological point of view, the accountancy results of the farms of Illinois, Iowa and Indiana in 1932. The method of book-keeping in Michigan is on the same bases as that in Illinois. The gross return, the farming expenses, and the final results will be taken in succession.

It will be noted that the size of the farms under review varies around 75 hectares; that the grouping of farms is made as in Europe by system of farming and by regions. This provides useful starting points for the survey.

The Accountancy Offices have forwarded the results to the Institute in the form of very clear schedules, and it is obvious that no difficulty has been experienced in entering them on the tables used for the past five years for the results of European farms.

It is obvious that no comparison between countries or regions is possible unless account is scrupulously taken of the specific character of the farms studied, and of the general economic conditions, and unless the number of farms is representative of the region to which they belong. While it is clear that in order to make comparisons account must be taken of the differences which are found in the organisation of the farms, or result from the purchasing power, etc., it is equally true that one is fully entitled to establish valid comparisons between the financial results of two groups of farms of the same type in different countries. To proceed in this way is to throw light on the conditions, the financial results, and the tendencies in the development of essentially comparable groups of farms and to show the results which they have given against the background of the region from which they are drawn, and thereby to arrive at very interesting and very useful conclusions. It may be observed, for example, that in the States of Illinois, Iowa and Indiana, as in Denmark and the Netherlands, from 80 to 97 per cent. of the gross return of the farm are represented by live stock production; that in Indiana, labour presses less heavily than in Europe on the farm budget; that, as compared with the European farms, the interest on capital is high, especially in the case of certain groups of farms in Illinois; and that for certain groups of Illinois farms the social return is not sufficient to counterbalance the fact of a negative net return.

Reference has been made to the want of absolute uniformity in the methods employed in America and Europe respectively. This want of uniformity is not

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I. — GROSS RETURN

	Number of farms	Average area ha.	Animal		
			Horses	Cattle	
				Breeding slaughter stock, etc.	Milk and milk products

(a) Illinois					
Dairying.	203	80.43	—	20.57 13.65	82.27 54.58
Mixed live stock farms	128	80.26	—	20.82 20.79	25.98 25.94
Beef and hogs breeding farms	246	88.76	—	24.02 25.39	10.57 11.18
Grain farming	151	98.92	—	9.12 12.24	14.79 19.84
General farming (corn)	64	112.27	—	18.40 19.45	12.78 13.51
General farming (wheat & corn)	286	95.12	—	14.12 18.14	14.43 18.54
General wheat and dairying	167	72.99	—	4.79 5.74	35.77 42.84
Mixed farms.	69	76.07	—	2.52 5.03	15.82 31.57

(b) Iowa					
Farms of central Iowa	87	94.29	0.62 0.44	33.61 23.90	17.32 12.32

(c) Indiana					
Dairy farms of the North-West	47	80.13	1.39 1.01	—	78.66 56.90
Pasture and cereal growing farms of Kankakee	23	112.90	3.87 3.13	24.69 20	30.31 24.55
Dairy farms and general farming of North East.	113	64.75	2.47 1.70	10.16 7.02	48.56 33.55
Cash grain farms of West	40	107.64	1.08 1.08	4.74 4.74	17.42 17.43
Grain and livestock farms of the Centre	250	81.34	1.60 1.25	6.96 5.41	23.50 18.27
General farming of North East	107	58.68	2.37 1.80	4.50 3.41	39.07 29.58
Wheat and corn farms of South West	26	82.55	0.05 0.04	1.13 0.93	30.52 25.25
Hill farms of South	51	89.84	1.34 1.99	14.54 21.58	20.88 30.99
Other farms	53	80.53	0.78 0.76	2.68 2.62	13.61 13.32
Average	710	78.51	1.70 1.40	7.37 6.06	31.39 25.81

in gold francs per hectare).

Production					Crop	Forests	Misc.	Total
Pigs	Sheep	Poultry, etc.	Other livestock	Total	production		branches	

Farms.

29.12	2.63	12.63	—	147.22	—	—	3.50	150.72
19.32	1.75	8.38	—	97.68	—	—	2.32	100
37.63	1.55	10.36	—	96.34	—	—	3.81	100.15
37.57	1.55	0.34	—	96.19	—	—	3.81	100
48.92	1.65	6.75	—	91.91	—	—	2.68	91.59
51.72	1.74	7.14	—	97.17	—	—	2.83	100
16.08	1.14	7.58	—	48.71	23.20	—	2.63	74.54
21.57	1.53	10.17	—	65.35	31.12	—	3.53	100
30.47	0.46	4.69	—	66.80	24.79	—	2.99	94.58
32.22	0.49	4.96	—	70.63	26.21	—	3.16	100
35.52	1.13	8.25	—	73.45	1.80	—	2.58	77.83
45.64	1.45	10.60	—	94.37	2.31	—	3.32	100
15.52	0.67	17.63	—	74.38	5.10	—	4.02	83.50
18.59	0.80	21.11	—	89.08	6.11	—	4.81	100
15.21	0.36	12.58	—	46.49	0.36	—	3.25	50.10
30.36	0.72	25.11	—	92.79	0.72	—	6.49	100

Farms.

50.05	—	8.35	—	109.95	11.24	9.12	10.31	140.62
35.59	—	5.94	—	78.19	7.99	6.49	7.33	100

Farms.

24.02	1.81	16.44	—	122.32	8.15	—	7.78	138.25
17.37	1.31	11.89	—	88.48	5.89	—	5.63	100
26.39	3.04	19.07	—	107.37	9.90	—	6.18	123.45
21.38	2.46	15.45	—	86.97	8.02	—	5.01	100
32.06	9.23	22.78	—	125.26	12.01	—	7.47	144.74
22.15	6.38	15.74	—	86.54	8.30	—	5.16	100
40.88	1.19	9.49	—	74.80	20.15	—	5	99.95
40.90	1.19	9.51	—	74.84	20.16	—	5	100
51.70	5.88	14.17	—	103.81	16.80	—	7.99	128.60
40.20	4.57	11.02	—	80.72	13.06	—	6.22	100
39.69	4.48	21.08	—	111.19	9.54	—	11.34	132.07
30.05	3.39	15.96	—	84.19	7.22	—	8.59	100
38.20	0.36	18.40	—	88.66	28.19	—	4.02	120.87
31.61	0.30	15.22	—	73.35	23.32	—	3.33	100
16.55	2.63	9.17	—	65.11	0.31	—	1.90	67.38
24.56	3.90	13.61	—	96.63	0.46	—	2.91	100
57.73	2.94	13.45	—	91.9	6.75	—	4.23	102.17
56.50	2.88	13.16	—	89.24	6.61	—	4.15	100
40.77	4.64	15.78	—	101.65	12.94	—	7.01	121.60
33.53	3.81	12.98	—	83.59	10.64	—	5.77	100

2. — COST OF PRODUCTION

	Number of Farms	Average area ha.	Total					
			Labour			Farming		
			Employ- ees	Family	Total	Fertil- isers	Seeds	Stock- feeds

(a) <i>Illinois</i>								
Dairying	203	80.43	16.91 9.85	46.34 27 —	63.25 36.85			27.47 16 —
Mixed live stock farms	128	80.26	10 — 7.11	46.55 33.09	56.55 40.20			19.02 13.52
Beef and hogs breeding farms	246	88.76	10.93 8.90	38.25 31.14	49.18 40.04			16.19 13.17
Grain farming	151	98.92	10.72 9.87	35.83 32.99	46.55 42.86			—
General farming (corn)	64	112.27	13.92 13.65	30.10 29.52	44.02 43.17			—
General farming (wheat & corn)	286	95.12	12.11 11.66	35.31 34 —	47.42 45.66			6.13 5.90
General wheat and dairying	167	72.99	11.34 9.91	45.67 39.91	57.01 49.82			2.11 1.84
Mixed farms	69	76.07	5.21 6.62	37.32 47.45	42.53 54.07			—

(b) <i>Iowa</i>								
Farms of central Iowa	87	94.29	14.33 7.41	25 — 12.93	39.33 20.34			18.66 9.65

(c) <i>Indiana</i>								
Dairy farms of the North-West	47	80.13	11.65 9.92	4.69 3.99	16.34 13.91	3.09 2.63	2.68 2.28	9.90 8.43
Pasture and cereal growing farms of Kankakee	23	112.90	12.22 12.38	2.47 2.50	14.69 14.88	3.30 3.34	1.39 1.41	9.17 9.29
Dairy farms and general farming of North East	113	64.75	10.93 8.89	5.82 4.74	16.75 13.63	2.94 2.39	2.84 2.31	15.82 12.87
Cash grain farms of West.	40	107.64	10.41 11.35	1.19 1.30	11.60 12.65	0.21 0.23	1.55 1.69	7.73 8.42
Grain and livestock farms of the Centre	250	81.34	10.47 9.68	3.40 3.14	13.87 12.82	2.16 2 —	2.58 2.38	15.15 14 —
General farming of North East	107	58.68	9.33 8.71	4.12 3.85	13.45 12.56	2.37 2.21	2.27 2.12	11.70 10.92
Wheat and corn farms of South West	26	82.55	16.49 15.88	4.18 4.03	20.67 19.91	1.86 1.79	3.35 3.23	10.83 10.43
Hill farms of South	51	89.84	5.77 10.99	2.63 3.01	8.40 16 —	1.70 3.24	1.55 2.95	8.61 16.41
Other farms	53	80.53	9.28 10.66	1.65 1.89	10.93 12.55	4.49 5.16	2.16 2.48	10.72 12.31
Average	710	78.51	10.26 10.04	3.45 3.38	13.71 13.42	2.37 2.32	2.37 2.32	12.53 12.26

(1) Including depreciations.

n gold francs per hectare).

Expenses									Interest on capital	Total cost of production
Machine repairs, purchases and repair of tools	Repair of buildings, upkeep of land improve- ments	General stock farming expenses	Taxes	Insur- ances	Other current expenses	Total	Depre- ciations	Total		
<i>ms.</i>										
27.78	1) 17.37	6.03	21.19	—	8.56	108.40	—	171.65	106.76	278.41
16.19	10.12	3.51	12.34	—	4.99	63.15	—	100 —	62.20	162.20
21.60	1) 14.38	5.31	17.27	—	6.54	84.12	—	140.67	92.27	232.94
15.36	10.22	3.77	12.28	—	4.65	59.80	—	100 —	65.59	165.59
19.38	1) 11.49	4.54	16.70	—	5.36	73.66	—	122.84	89.16	212 —
15.78	9.35	3.70	13.60	—	4.36	59.96	—	100 —	72.58	172.58
19.02	1) 10.72	3.92	21.49	—	6.01	62.06	—	108.61	109.06	217.67
17.51	9.87	3.61	19.79	—	6.36	57.14	—	100 —	100.41	200.41
19.38	1) 9.07	4.18	19.74	—	5.57	57.94	—	101.96	94.74	196.70
19.01	8.90	4.10	19.36	—	5.46	56.83	—	100 —	92.92	192.92
16.29	1) 9.28	3.76	15.57	—	5.41	56.44	—	103.86	72.09	176.55
15.69	8.93	3.62	14.99	—	5.21	54.34	—	100 —	69.09	169.99
17.73	1) 11.24	6.39	12.48	—	7.47	57.42	—	114.43	62.15	176.58
15.50	9.82	5.58	10.91	—	6.53	50.18	—	100 —	54.31	154.31
11.34	1) 7.47	2.22	9.53	—	5.57	36.13	—	78.66	39.37	181.03
14.42	9.50	2.82	12.11	—	7.08	45.93	—	100 —	50.05	150.05
<i>arms.</i>										
21.08	1.70	1.86	20.41	1.60	4.69	70 —	84.07	193.40	99.79	293.19
10.90	0.88	0.96	10.55	0.83	2.42	36.19	43.47	100 —	51.60	151.60
<i>arms.</i>										
2.32	0.82	—	25 —	—	22.06	65.87	35.21	117.42	60.92	178.34
1.98	0.70	—	21.29	—	18.79	56.10	29.99	106 —	51.88	151.88
1.39	0.57	—	18.51	—	15.57	49.90	34.12	98.71	50.23	148.94
1.41	0.58	—	18.75	—	15.77	50.55	34.57	100 —	50.89	150.89
2.17	1.13	—	22.78	—	20.31	67.99	38.15	122.89	55.81	178.70
1.77	0.92	—	18.54	—	16.52	55.32	31.05	100 —	45.41	145.41
2.01	0.51	—	26.96	—	16.13	55.10	25.05	91.75	66.25	158 —
2.19	0.56	—	29.38	—	17.58	60.05	27.30	100 —	72.21	172.21
1.75	0.72	—	24.95	—	19.49	66.80	27.52	108.19	54.78	162.97
1.62	0.67	—	23.06	—	18.01	61.74	25.44	100 —	50.63	150.63
1.60	0.52	—	21.70	—	18.81	58.97	34.70	107.12	52.49	159.61
1.49	0.49	—	20.26	—	17.56	55.05	32.39	100 —	49 —	149 —
1.80	1.13	—	25.10	—	18.04	62.11	21.03	103.81	47.34	151.15
1.73	1.09	—	24.18	—	17.38	59.83	20.26	100 —	45.60	145.60
0.62	0.67	—	13.30	—	8.50	34.95	9.13	52.48	26.87	79.35
1.18	1.28	—	25.34	—	16.20	66.60	17.40	100 —	51.20	151.20
1.34	0.77	—	20.67	—	14.59	54.74	21.39	87.06	46.69	133.75
1.54	0.89	—	23.74	—	16.76	62.88	24.57	100 —	53.63	153.63
1.70	0.77	—	22.78	—	17.94	60.46	28.04	102.21	52.40	154.61
1.66	0.75	—	22.29	—	17.55	59.15	27.43	100 —	51.27	151.27

	Number of farms	Average area ha.	Net return		Profit or loss on farms assets	
			per ha.	in % of assets	per ha.	in % of assets
(a) <i>Illinois</i>						
Dairying.	203	80.43	20.93	0.98	127.69	5.98
Mixed live stock farms	128	80.26	40.5	2.19	132.79	7.19
Beef and hogs breeding farms	246	88.76	28.25	1.58	117.41	6.58
Grain farming	151	98.92	34.07	1.56	143.13	6.56
General farming (corn)	64	112.27	7.38	0.39	102.12	6.59
General farming (wheat & corn)	167	72.99	20.93	2.49	93.08	7.49
General wheat and dairying	286	95.12	26.03	1.79	98.72	6.79
Mixed farms	69	76.07	28.56	3.63	67.93	8.63
(b) <i>Iowa</i>						
Farms of central Iowa	87	94.29	52.78	2.66	152.57	7.68
(c) <i>Indiana</i>						
Dairy farms of the North-West	47	80.13	30.83	1.71	40.09	3.29
Pasture and cereal growing farms of Kankakee	23	112.90	24.74	2.46	25.49	2.54
Dairy farms and general farming fo North East	113	64.75	21.85	1.96	33.96	3.04
Cash grain farms of West	40	107.64	8.20	0.62	58.05	4.38
Grain and livestock farms of the Centre.	250	81.34	20.41	1.86	34.37	3.14
General farming of North East	107	58.68	24.95	2.38	27.54	2.62
Wheat and corn farms of South West.	26	82.55	17.06	1.80	30.28	3.20
Hill farms of South	51	89.84	14.90	2.77	11.97	2.23
Other farms	53	80.53	15.11	1.62	31.58	3.38
Average	710	78.51	19.39	1.85	33.01	3.15

RESULTS.

Return on own capital per ha.	Family farm earnings per ha.	Social return						Per man-day family and employees
		Per hectare	In %					
			Labour costs		Net return	Taxes	Total	
			Employees	Family				

Farms.

—	25.41	63.51	26.63	72.96	— 32.96	33.37	100	—
—	6.03	33.30	30.03	139.79	— 121.68	51.86	100	—
—	10 —	37.63	29.04	101.65	— 75.07	44.38	100	—
—	1.76	33.97	31.56	105.47	— 100.29	63.26	100	—
—	22.72	56.38	24.69	53.39	— 13.09	35.01	100	—
—	9.28	36.96	32.77	95.53	— 70.43	42.13	100	—
—	14.74	38.56	29.41	118.44	— 80.21	32.36	100	—
—	8.76	23.50	22.17	158.80	— 121.53	40.56	100	—

Farms.

— 69.02	— 44.02	6.96	205.89	359.19	— 758.33	— 293.25	100	—
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Farms.

17.87	22.56	62.17	18.74	7.54	33.51	40.21	100	9.85
21.50	23.97	57.94	21.09	4.26	42.70	31.95	100	10.48
14.12	19.94	61.38	17.81	9.48	35.60	37.11	100	9.04
4.34	5.53	46.76	22.26	2.54	17.54	57.66	100	7.79
13.50	16.90	59.23	17.68	5.74	34.46	42.12	100	9.55
19.23	23.35	60.10	15.53	6.86	41.51	36.10	100	8.58
12.32	16.50	62.83	26.25	6.65	27.15	39.95	100	9.82
9.85	12.48	36.60	15.76	7.19	40.71	36.34	100	9.22
11.34	12.99	46.71	19.87	3.53	32.35	44.25	100	8.90
13.67	17.12	55.88	18.36	6.17	34.70	40.77	100	9.22

however greater than appears among the various systems of accountancy in the European countries. The gross return is composed of the receipts in the cash book to which are added the increases shown in the inventory and the contributions in kind from the farm to the household, deducting the purchases of stock and the decreases of inventory; in this way there is obtained the total increase of value achieved in the space of one year by transformation, exchange and, revaluation.

On the other hand there are shown on the debit side the labour costs, including the fair wage claim for the work of the members of the family; the outgoings of the cash book with the exception of the interest on debts (actually paid) and of purchases of live stock; repairs, taxes and insurances; depreciations; and finally decreases in farm supplies, etc., as shown on the inventory.

Taking the difference between the credit and debit sides as thus calculated, a true net return is obtained. If from this latter value, interest payments actually made are deducted, the family capital return is obtained; adding to this last, the fair wage claim for the work done by the family, the family farm earnings are reached. All the constituent elements of the social return and of the profit or loss on total farm assets are equally to hand. In order to compare the tendencies of the economy of American farms with those of European farms, use will be made of the relative figures: percentages of the gross return and of the farming expenses; net return and profit or loss on total farm assets in percentage of the capital assets, percentages of the social return; the social return, family farm earnings, labour earnings per man-work-day, when the number of days of work are known.

The inventory is established at the beginning and at the end of the farming season. The accompanying table will indicate more clearly than any commentary the composition of the capital assets.

It will be seen at a glance that all the required elements appear on this table. The objection may be made that the information relative to the farms of Illinois and Iowa is incomplete, as the percentage of liabilities and of the family capital remain unknown, but attention may be drawn to the table showing cost of production: it will be seen that in default of the value of the liabilities and of the family capital, the Illinois and Iowa Offices have shown the total of the interest payments on debts, and that if these are capitalised at the usual rate, it will be easy, if required, to reconstitute the values in question.

The United States Accountancy Offices have placed at the disposal of the Institute a considerable mass of additional information, some part of which will be utilised in a later article wherein it is proposed to illustrate the characteristics of the farm in certain regions of the United States. Such information relates to:

- Distribution of the tillable area and of the area cultivated;
- Yields in kind of the different field crops;
- Values of the various productions;
- Milk yield per dairy cow;
- Average prices received by producers;
- Efficiency of the means of production;
- Costs (Michigan).

Percentage Composition of the Capital Assets.

	Number of farms	Average area ha.	Lands crops improvements	Buildings	Landlord's capital	Live stock	Dead stock	Circulating capital	Tenant's capital	Capital assets		Liabilities in % of assets	Own capital in % of assets
										in %	in gold fr.		
(a) <i>Illinois Farms.</i>													
Dairying	203	80.42	80.50	80.50	80.50	9.06	5.56	4.88	19.50	100	2135.26	—	—
Mixed live stock farms	128	80.26	80.84	80.84	80.84	8.83	5.87	4.46	19.16	100	1845.46	—	—
Beef and hogs breeding farms	246	88.76	83.50	83.50	83.50	7.24	4.76	4.50	16.50	100	1783.35	—	—
Grain farming	151	98.92	87.50	87.50	87.50	4.08	4.10	4.32	12.50	100	2181.13	—	—
General farming (corn)	64	12.27	87.17	87.17	87.17	4.67	4.60	3.56	12.83	100	1894.84	—	—
General farming (wheat & corn)	286	95.12	82.86	82.86	82.86	7.33	5.17	4.64	17.14	100	1453.76	—	—
General wheat and dairying	167	72.99	76.99	76.99	76.99	8.69	7.45	6.87	23.01	100	1243.04	—	—
Mixed farms	69	76.07	77.20	77.20	77.20	9.55	6.21	7.04	22.80	100	787.32	—	—
(b) <i>Iowa Farms.</i>													
Farms of central Iowa	87	94.29	61.56	21.71	83.27	7.47	5.11	4.15	16.73	100	1086.08	—	—
(c) <i>Indiana Farms.</i>													
Dairy farms of the North-West	47	80.13	—	—	—	77.99	10.13	6.82	22.01	100	1218.45	4.94	95.06
Pasture and cereal growing farms of Kankakee	23	112.90	—	—	—	77.05	11.76	6.45	22.95	100	1094.54	4.97	95.03
Dairy farms and general farming of North East	113	64.75	—	—	—	77.55	12.03	6.38	22.65	100	1116.10	12.60	87.40
Cash grain farms of West	40	107.64	—	—	—	84.37	7.28	4.72	15.63	100	1325.95	6.63	93.37
Grain and livestock farms of the Centre	250	81.34	—	—	—	79.40	9.70	6.25	20.60	100	1095.57	11.77	88.23
General farming of North East	107	58.68	—	—	—	76.68	11.08	7.78	23.32	100	1049.89	10.02	89.98
Wheat and corn farms of South West	26	82.55	—	—	—	77.72	11.59	5.69	22.28	100	946.76	8.52	91.48
Hill farms of South	51	89.84	—	—	—	76.76	13.47	5.59	23.24	100	537.32	13.78	86.22
Other farms	53	80.53	—	—	—	79.84	9.75	6.19	20.16	100	933.81	6.80	93.20
Average	710	78.51	—	—	—	78.93	10.30	6.30	21.07	100	1047.99	9.98	90.02

The Bureau of Agricultural Economics has also forwarded a publication entitled: *Income from farm production in the United States*. This contains statistical information for each State on the value of the agricultural production, the gross return, receipts, in thousands of dollars; the financial results of some 700 farms throughout the country. It is not however practicable to introduce these figures into our tables. The gross return, for example, although resembling our gross return in so far as it includes the value of the products consumed by the farm household, and that of products sold, differs in the respect that the receipts have not been classified, so that the return does not represent the increase in value obtained in the space of one year. The financial results are likewise incomplete: on the credit side there is not shown the value of products consumed by the farming household; on the debit side the fair wage claim for the work done by the farming family does not appear.

These few considerations will not be carried further, as it is not intended here to pass beyond the methodological standpoint adopted for the present: in a future article, in which the valuable material relating to the United States will be studied in the same manner as the accountancy results of European farms have been studied, the economic standpoint will be adopted.

JOSEPH DESLARZES.

CULTIVATION OF COTTON IN SPAIN

During the period 1914-19—that of the Great War—considerable difficulty was experienced in Spain in obtaining cotton for the textile industry, since the raw cotton used up to that time was almost entirely of foreign origin. So great was the scarcity that this industry was to a large extent paralyzed and the necessity of cultivating cotton in those parts of Spanish territory most suitable for the purpose was fully realised.

Apart from industrial considerations there were many reasons for introducing cotton growing into Spain. It was extremely useful from the agricultural point of view since the roots of the cotton plant penetrate deeply into the soil, seeking in the deeper layers the elements necessary to its full development, whereas the majority of the crops have shorter roots which do not extend far below the surface; thus their alternation with cotton ensures the almost complete utilisation of the nutritive elements of the soil.

Under another aspect, not purely technical, the cultivation of cotton is beneficial to the country since it may go far towards settling the increasingly urgent social problem created by the growth of unemployment. An essential preliminary to the introduction of cotton growing was the proper treatment of the lands intended for cotton production; clearing, drainage and irrigation operations were necessary for which a large supply of labour would be required. Once the land was in suitable condition and the normal cycle of production was being followed, labour would be absorbed also by the attention required by the crop and the duration of the harvest. As is well known, the gathering has to be effected gradually as the bolls keep on opening, and the work of gathering is so simple

that it can be carried on by women and children. In this way entire families of agricultural workers are provided with occupation. Moreover the districts most suitable for cotton-growing; namely the temperate coastal regions, are those in which the country people are unemployed during the greater part of the year, since their only occupation is the harvesting of olives, the principal product of these districts. The new cotton crops, on the other hand, involving as they do the labour of plantation, care, and a protracted harvest, provide work for a large mass of farm workers almost throughout the year.

The advantages of introducing into Spain the cultivation of cotton were not confined to those referred to above. In addition to these two specially important considerations there was another of the utmost importance, namely, the alleviation of the agricultural crisis which, in Spain as in all other parts of the world, is still felt. As a matter of fact, two of the most important and characteristic crops of the Iberian Peninsula, grapes and olives, are economically detrimental to agriculture owing to their large annual yield coupled with the well known difficulty attending their export. Hence they are a heavy charge on agriculture, weighing it down and impoverishing it. The new crop, on the other hand, which is grown for the Spanish market, is extremely profitable and has encroached on certain areas originally intended for the cultivation of grapes and olives. This innovation has had the effect of increasing the national wealth without depriving the country of gold as did the importation of cotton. Until a short time ago Spain was entirely dependent on other countries for this raw material, indispensable to the textile industry, and the average importation amounted annually to some 90,000 tons, representing a sum of over 500 million pesetas diverted annually from Spain to other countries. This annual flow of capital from the country contributed to the reduction of the national wealth, since the payment for foreign cotton is made on a gold basis.

All these reasons pointed to the great advisability of the introduction into Spain of a cultivation offering so many advantages, and legislation was accordingly initiated to make immediate provision for the planting of so essential a crop.

The first measure, dated in July 1923, was limited to the formation of a permanent Committee of enquiry, with the function of promoting the plantation of cotton and the progressive development of cotton growing in Spain.

The main lines of activity in relation to the introduction of cotton growing were made the subject of various decrees, and on 3 February 1926 regulations were issued for the establishment of the State Cotton Commission (*Comisaria Algodonera del Estado*), the official body charged with the plantation and supervision of the new crop. No good purpose would be served by comments on this organisation or by supplying details of its working, since any interest in it came to an end when on 7 November this Commission was dissolved to be replaced by another institution of wider scope and powers, *viz.*, the one which now supervises all the services connected with cotton, the Institute for the promotion of cotton growing (*Instituto de Fomento del Cultivo Algodonero*). This Institute was established on 22 March 1932, and now functions in accordance with the terms of the regulations issued 22 March 1934.

The principal object of the Government in establishing this Institute was the settlement of the problem created by the entire lack of raw cotton for the textile industry, a fact which seriously affected the national economy. With this end in view it was proposed to plant cotton to the extent of 100,000 hectares. The provinces selected for plantation, in accordance with the recommendations of the Council of the Committee of enquiry already mentioned, were those of the Andalusian littoral as well as a small area in the centre of the country. The regions selected combine the characteristics essential to the new cultivation, namely, a temperate climate as favouring the cycle of growth, absence of frost from May to October and an annual rainfall of not less than 500 mm.

The Institute for the promotion of cotton-growing which, as mentioned above, supervises all the relative services, is attached to the Ministry of Agriculture and is supplemented by a Central Commission under which are the Provincial Committees in direct contact with the official cotton ginning factories. Certain details regarding the function of these different bodies may be given here.

The Central Commission consists of a President (the Under-Secretary of Agriculture) two Vice-Presidents and six members, all of which offices devolve on the competent authorities and on the representatives of cotton growers and of the textile industry. The office of secretary is held by an agricultural engineer nominated by the Minister of Agriculture.

The Provincial Council consist of six members selected from among cotton-growers belonging to legally constituted agricultural syndicates, two agricultural workers who have specialized in cotton growing, nominated by the workers' associations, a local propaganda agent and the chief engineer of the provincial agricultural section in which are situated the central offices of the Provincial Council. The last named member acts as technical advisor. Each of the Provincial Councils has a president, vice-president and secretary elected from among the members.

The Central Commission is the supreme organ governing the Institute: the Provincial Councils are responsible for the maintenance of its relations and contacts with the growers. The Commission directs and supervises all the services, determines the various amounts to be invested in the promotion of cotton growing, fixes the prices of cotton each season, awards prizes to the growers, organizes the work of selecting and experimenting on the different varieties and estimating the industrial value of the seeds: in short, it gives its attention to all the various activities of the Institute. Owing to their scope and variety these activities are divided into five sections: technical, administrative, commercial, industrial and propaganda. Before describing the functions of each of these sections, some account of their relation to the financing of the scheme, that is, with the provision of capital for the assistance of the growers, may not be out of place.

Before the Institute existed, and in the early days of the Cotton Commission referred to above, capital was provided in the following manner: in the annual State Budget an allocation was made of two million pesetas; out of this sum there were to be purchased the necessary seeds which were distributed free of charge to the growers in the proportion of 50 kilos per hectare; moreover the grower received a sum of 100 pesetas for each hectare under cultivation, such

sum to be payable on the completion of the work of clearing on the plantation; finally, a sum was advanced with the object of supplementing the harvesting expenses, this being in the proportion of 100 pesetas for each hectare of land under cultivation. After harvesting, the cotton was consigned by the grower to the official ginning factory where the raw product was sold in strict accordance with the official price fixing. When the amount realised from the sale exceeded the sums granted or advanced to the growers, the margin of profit which remained was distributed among them in the form of prizes awarded in proportion to the number of kilogrammes of cotton harvested by each.

The financial system now prevailing is as follows: instead of allocating a fixed sum on the annual budget, as formerly, a tax of 0.05 pesetas is imposed on each kilogramme of raw cotton imported, this being collected by the custom-house of the nation and paid into the Bank of Spain, where it is credited to the current account of the Institute for the promotion of cotton-growing. The grant to the cotton-growers, as also the advance of 100 pesetas per hectare, was abolished, but, on the other hand, he is entitled to apply for the amount he requires in order to meet the expenditure for the season. Such amounts are regarded as loans and are deducted from the final sum received for the raw cotton consigned by him to the ginning factory, and they are not paid over to him in the first instance until his plantation has been inspected for the purpose of verifying need of assistance. The Institute also requires adequate security for the sums advanced.

It is obvious that this method of financing the cultivation of cotton places this branch of agriculture entirely under the direction, inspection and supervision of the State. The Institute has under its supervision all activities relating to this newly introduced cultivation of cotton; nothing escapes its control, as all the working centres in the Institute itself, the various activities devolving on the constituent five sections. These are: the technical section, responsible for the choice of areas to be placed under cultivation, the selection of seeds, practical demonstrations, the phytopathological and laboratory work; the administrative section, dealing with administration, accountancy and general statistics; the propaganda section, charged with the work of encouraging cotton-growing throughout all the Spanish provinces adapted for this crop by climate and soil conditions, convincing farmers of the financial advantages offered by this form of agriculture, encouraging the establishment of syndicates and enlightening farmers as to the benefit of economic co-operation; the commercial section, concerned with the grading and marketing of raw cottons and also with the marketing of by-products such as fats, seed-cakes, etc.; the industrial section, responsible for the establishment of ginning factories where, in addition to their primary function, the industrial testing of the fibre and industrial valuation of the seeds are carried out.

The object pursued by the State through the medium of the Institute, with its five sections, is the rapid extension of the areas under cotton, at the same time restricting the distribution of seeds to regions suitable for cotton-growing, the rigorous inspection of cotton crops, the copious diffusion of information in order that the efforts of the grower may be well directed since ignorance of

the methods of cultivation required for this new crop may lead to individual failures.

The Government has also under consideration the introduction of a more scientific system of crop rotation, involving the utilization of many areas now uncultivated or inadequately farmed, and also as already stated the employment of farm labour during those seasons of the year when agricultural work is at its lowest ebb. Moreover, the Government wishes to establish direct co-operation with the growers, giving them facilities for obtaining the necessary funds during the periods of routine field-work and harvesting. Through the medium of the propaganda section, referred to above, the Government is forming local cotton-growers' syndicates of a co-operative nature, providing them with ginning factories in such numbers that each syndicate in the productive areas has its own factory and thus avoids the cost of transport and other expenses caused by the concentration of the entire national harvest in a few scattered factories. Efforts are also being made towards increased utilization of the harvest yield in every particular, devoting the raw material to the textile industry for manufacturing purposes and converting into meat and other products the residues of manufacture by using them as stock feeds.

Described in general terms, these are the advantages to be obtained from the new cultivation which, it may be emphatically repeated, should be continuously directed and controlled according to a general plan, since individual farmers cannot obtain the definite results that are possible for a Government with financial means and an army of competent technicians at its command.

* * *

The real establishment of cotton growing in Spain belongs only to the last five years for, although as a matter of fact it was initiated five years earlier with the formation of the Cotton Commission, the earlier period may be regarded as experimental. During the last five years on one hand the cultivation was fully introduced and, on the other, large areas of land were made available so that in a second period of five years there might be achieved the realization of the Government's ideal, namely—as set forth in the law for the formation of the Institute referred to—the extension of this crop to an area of 100,000 hectares.

Before giving statistical data concerning the cultivation and yield of cotton during the later period from 1930-31 to 1934-35 it should be stated that the rate of the increase in these respects will be greatly accelerated during the coming seasons. This increase can be predicted owing to the works carried out in the basin of the Guadalquivir for the purpose of regulating the bed of the river and reclaiming large tracts areas of marshland hitherto uncultivated. By this means a very considerable area will be available admirably adapted to cotton growing since it forms part of a region in which the soil and climate combine to afford ideal conditions for this plant.

The following table shows the official data regarding the areas sown to cotton and the yield during the five year period from 1930-31 to 1934-35.

*Area under Cotton in Spain and Yield during the 5 year period
from 1930-31 to 1934-35.*

Seasons	Area Sown	Total Yield		Equivalent in bales of cotton (of 225 Kg.)	% of fibre	Yields	
		Raw Cotton	Fibre			Per hectare	
						Raw Cotton	Fibre
	Hectares	Kg.	Kg.	Kg.	Kg.		
1930-31	15,241	4,241,645	1,474,776	6,555	34.77	278.3	97
1931-32	5,491	1,594,798	524,374	2,331	32.88	290.4	95
1932-33	8,167	3,141,744	1,059,118	4,709	33.71	384.7	130
1933-34	7,229	1,297,026	432,664	1,923	33.36	178.2	66
1934-35	11,564	5,711,176	1,932,555	8,589	33.84	493.8	157

Statistics for the current season show a great increase in the area sown to cotton which, according to the official figures, amounts to 25,565 hectares, while the yield of the different provinces will probably reach a total of some 8,000 kg. of raw cotton. Of these figures, 18,000 hectares of land and a probable yield of approximately 5,000 kg. of raw cotton apply to the province of Seville, which had the entire benefit of the new irrigation works in the Guadalquivir basin (1).

The figures of the preceding Table afford the most precise criterion of the results achieved by the Institute through the medium of its five sections. The facts are as follows:— the first season, 1930-31, was that in which the cotton crops covered the largest area: the three successive seasons showed a decrease of some 50 % and the fifth a decrease of 25 %. From the table given above it will be seen that, the yields per hectare with the exception of 1933-34, when the yield was only 178.2 kg. per hectare, surpass the yield of the first season, 1930-1931, in spite of the fact that in that first season the area under cultivation was far more extensive. During the last season the unit yield was almost double that of the first. Stress should be laid on the fact that this variation in the figures provides indisputable evidence of the work carried out by the Institute since the increased unitary production is largely due to the work of selecting land and seeds and to the introduction of methods of cultivation found by experience to be more practical and convenient.

It may be fairly assumed, therefore, that production will increase at a very rapid rate since account must be taken not only of the factors of selection and improvement of the crops, but also of another of even greater importance, namely, the availability of irrigated land situated in the most suitable regions. Thus there is no reason why the desire of the Government to extend to 100,000 hectares the area under cotton should not be fulfilled within the next few years.

Available official statistics supply data in regard to the number of families who have found in cotton growing a continuous and remunerative occupation,

(1) Statistical data of the cotton harvest during the season 1935-36, calculated on 1 October 1935 by the Institute for the Promotion of Cotton-growing.

making it possible to estimate the advantages conferred on the rural population by the introduction.

According to such statistics the following families have been employed in cotton growing during the five years 1930-31 to 1934-35:—

Years	Number of Families
1930-31	5,565
1931-32	4,458
1932-33	4,329
1933-34	4,232
1934-35	4,860

From the above table it appears that an average of 4,700 rural families have found occupation every year in cotton growing, from which it may be assumed that this number of families has been saved from enforced idleness almost throughout the year, since the cotton plantations are situated in regions where, as has been said, the nature of the crops under cultivation leads to suspension of work and unemployment.

Such a change represents improved conditions and a higher standard of living. When account is taken also of the increase in the seasonal work of harvesting the product, the advantages of cotton growing are indisputable.

The number of municipal districts corresponding to all the provinces in which cotton growing has been introduced, amount to 225, more than 50 % of this number corresponding to the province of Seville.

We are also in possession of certain interesting data relating to the sale price of cotton in each of the five years under consideration. It varies from a minimum of 2.24 pesetas per kg. of raw cotton in 1930-31 to maximum of 2.57 pesetas in 1934-35. It would be extremely interesting to have further information concerning the cost of production in order to estimate the profit obtained by the grower. In the present circumstances, however, when the cultivation of cotton is developing under State direction, supervision and financial assistance, knowledge of the profit factor would only serve to show the greater or less utility of the introduction of this new type of agriculture.

Assuming an average production of 325 kg. per hectare during the five year period, as shown by the figures given above relative to the yield per hectare, and multiplying it by the average sale price of 2.30 pesetas, the result is a total sale price of 747.25 pesetas per hectare. Deducting from this amount the cost of seeds, the amounts paid in grants to the grower for the cultivation and harvesting expenses, and allowances for other general expenses such as machinery, transport and warehousing, there still remains a margin of profit. This profit will undoubtedly be somewhat higher as soon as cotton growing is declared free from State intervention, when the outlay representing the cost of production is more carefully supervised by the grower and the market supply and demand are allowed free play.

BIBLIOGRAPHY ON ECONOMIC AND SOCIAL QUESTIONS

THE ECONOMIC CONFERENCE OF METROPOLITAN FRANCE AND HER OVERSEAS POSSESSIONS. December 1934-April 1935, Paris. Larose Editeurs, 1935.

Two large volumes full of interesting data and giving accounts of "The Economic Conference of France and her Colonial Possessions" have been recently published in Paris. The Conference took place between December 1934 and April 1935. It must be considered one of the most striking evidences of the tendency to create vast economic territorial units as the logical and inevitable consequence of the present development of economic nationalism leading to autarchy.

From the beginning of the economic depression in 1929, and above all since the various Governments in their effort to control the crisis and to check the tendency towards self-sufficiency and the decay of national economy began to apply the principles of a planned economy, countries possessing large colonial empires have attempted to organise the trade relations between the mother country and its colonies in such a way as to become, as far as possible, independent of foreign markets both as regards their imports of raw materials and their exports of their industrial production.

In the course of these last years the Ottawa Conference (1932) greatly strengthened the economic ties between the various parts of the British Empire; and both in Great Britain and France the economic relations between the metropolis and its overseas domains have become considerably closer at the expense of commercial relations with foreign countries.

France, since 1932, has developed her trade with its overseas possessions in earnest. The following figures show the percentage of the increase in the trade between France and her colonies, as compared with the trade with foreign countries: (1)

	1925	1929	1931	1932	1933	1934
Importations into France	10.5	12.0	14.6	20.9	23.7	25.2
Exportations from France.	14.6	18.8	23.4	31.5	32.4	30.9

In 1934 an attempt was made to organise more efficiently the commercial relations between France and her colonial empire. This attempt was based on the development of resources and buying power of the different parts of "la France totale," aiming at the formation of an independent economic unit. The Economic Conference of Metropolitan France and her overseas possessions was entrusted with the task of devising the means to attain this end.

In the words of the Conference itself, French economy was already gravely affected and menaced by imminent and total ruin unless restored by immediate energetic measures. In spite of her wealth and the resources of her great empire, France saw her commercial balance take a sharp turn for the worse in 1934, notwithstanding the fact that an improvement had been effected between the mother country and its colonies: chiefly Algeria and Tunisia. Whether her colonial possessions could relieve France of the weight of her losses while improving the economic status of the colonies was the problem which demanded the attention of the Conference. It can be said at once that, in the main, the question was answered in the affirmative. The Conference

(1) Aperçu Général du Commerce International 1934, S. d. N. 1935.

did not declare itself for an autonomous economy altogether, either by France or by any of its colonies: yet one cannot avoid the impression that the findings of the Conference as well as its conclusions lead to the establishment of an autonomous economic system of "la France totale," i. e., of France and the various parts of her colonial empire, with only such attempts at trading with other nations as might be warranted by local exigencies and favourable conditions. This is particularly emphasized in the report of the "Commission d'Économie générale." The report registers the failures of all the attempts which, at the Peace Conference and after the signing of the peace treaties, have been made to "codify and guarantee the economic relations between peoples." The Conference of Brussels, Spa, Genoa, and finally the World Economic Conference at Geneva, in spite of the goodwill of those who attended them, were not successful in establishing "the peaceful and prosperous economy of the world" that the framers of the peace treaties had foreseen when their "world charter of commerce" had been prepared and approved by the Peace Conference. In view of these repeated failures which implied prolonging the ravaging effects of the crisis France turned to her own resources. The report of the "Commission d'économie générale" registers with well justified pride the fact that the moment the representatives of Metropolitan France and those of all the different parts of the Empire got together, they found that the long dormant "imperial mentality" had suddenly awakened and "la France totale" was ready to undertake in 1935 an imperial policy as a remedy against "le marasme qui étroit toutes ses possessions autant qu'elle-même." Undoubtedly, under the stress of necessity the process of tightening the trade bonds between metropolitan France and her Empire, had been slowly developing in the course of the last four or five years. But it had been a process lacking a well defined policy, due to a natural reaction to the strangling effects of the barriers which were raised on every side making international exchanges and trade relations a practical impossibility. But, as the report of the Commission further states, the conviction that the adoption of an imperial policy would lead France and her Empire to new prosperity was not born only of the pressure of external factors. Even if this policy may not entirely free "la France totale" from the necessity of looking elsewhere for certain raw materials, it is however sufficient to insure her a prosperous and powerful imperial economy.

A good many years will pass, says the "Rapport de la Commission d'Économie Générale," before the metropolis may even think of finding again, accessible and remunerative markets outside its colonies. With great exactness in the minutest details the Commission undertook the study of the means necessary for the development of an imperial economic system in the following order:—

- (1) relations between the colonies and the metropolis;
- (2) organizations necessary to make the new forms of collaboration between the colonies and the metropolis really effective;
- (3) technical means required by a joint economy;
- (4) measures to be taken by the Government to adhere to the economic programme recommended by the Commission;
- (5) measures of a professional or private character and imperial regulation of production and exchanges.

The Commission expressed its opinion that it was necessary to introduce important reforms in various governmental bureaux dealing particularly with administrative and economic relations between the colonies and the metropolis. The creation of other bureaux, technically competent to deal with such radical modifications of the economic system of France as were suggested and advocated by the "Commission d'Économie générale," was strongly recommended. Similar recommendations were made

by the "Commission de la Production," the "Commission de Soutien," the "Commission de Finance," the "Commission du Régime Préférentiel de l'Exportation métropolitaine," the "Commission de Technique et de Propagande du Commerce Impérial," the "Commission des relations internationales des possessions d'Outre-mer," the "Commission de la Prévoyance sociale," and lastly by several special Commissions, such as the "Commission spéciale des Productions métropolitaines exportables vers la France d'Outre-mer," the "Commission spéciale des Productions agricoles de la France d'Outre-mer," the "Commission spéciale de l'agriculture," the "Commission de l'Outillage colonial."

In the opinion of the "Commission d'Economie générale" it will be possible to develop the imperial economic plan only by degrees. It will be necessary, to begin with, to adopt immediate relief measures in favour of certain products and undertakings threatened by utter collapse as a result of the world economic disorder of which the Empire is the victim through no fault of its own.

These measures will be of a protective or preferential character in favour of the products of the empire. This will be the first step, after which a far-seeing programme of a permanent character, except for adaptations and modifications suggested by circumstances and experience, will indicate to the authorities as well as to private economic bodies, the path to be followed for the success of the plan of an imperial economic system, resulting from the consolidation of all the French local economies and their absorption into one national economy of "la France des cinq parties du monde."

The "Commission Spéciale de Soutien," in dealing with the problem of assistance to strictly national production points to the fact that a policy of support leads to autarchy, which, in the opinion of the Commission, is an evil, unavoidable under present tendencies all over the world, but to be checked as much as possible through moderate means, in the hope that the evil economic tendencies of today may disappear and normal economic exchanges may be resumed. In the meantime France "must adapt itself to autarchy or face a hopeless fight." The cost of a policy of support will undoubtedly be very heavy; but, from the point of view of the valorisation of the colonies, such policy will fully justify the sacrifices to be made by the metropolis. The Commission recommends the adoption of all the financial measures which may insure the success of the plan submitted to the Conference, after a careful survey of the particular economic conditions of the metropolis and of every section of the Empire, and also of the relations between the metropolis and its overseas possessions.

Special Statutes will regulate the relations between France and Algeria, Tunis, Morocco, mandated territories, colonies, the territories of the Congo and Niger regions, the New Hebrides.

It has been estimated that the adoption of the solutions suggested by the Commission, will give the colonies, protectorates and mandated territories a supplementary yearly profit of between 500 and 600 million francs, while the whole of the Empire will benefit by the valorisation of all its resources to such a degree as to become nearly independent of foreign markets, especially as regards agricultural products as a whole and cereals in particular. The colonies will be able to furnish the metropolis with the mineral products which it lacks as soon as the technical and financial measures needed for the complete exploitation of the subsoil of the Empire are adopted. An energetic policy of research and drilling of oil fields will have to be pursued; the Commission however found that the powerful refining industry created by the metropolis is already capable of meeting all the demands of the Empire. By a rapid expansion of the policy of production of vegetable oils through technical improvements, the adoption of local fiscal measures and of protectionist and preferential measures in favour of

the imperial production at large, the problem of self-sufficiency in this field will be safely and satisfactorily solved. A survey of the whole problem of the industrialisation of colonies, protectorates and mandated territories concluded the work of the Commission, which besides recommending the adoption of all the measures held necessary to insure the success of the general plan of imperial economy, indicated, on the basis of careful data, the possible outlets for French metropolitan and colonial production even under a regime of closed economy. The adoption of a strict preferential regime on behalf of metropolitan exports to its overseas possessions is fully justified according to the conclusions reached by the special Commission of Imperial preference, on account of: (a) conditions created by the British preferential policy in favour of its dominions and of "do-ut-des" vis-à-vis the countries whose money follows the sterling; (b) Russian and Japanese dumping; (c) the American policy of development of home markets. After all the French overseas possessions are already the metropolis' best clients. In 1933, 47.6 % of the total French metropolitan sales abroad were made in the French colonies. It is therefore quite evident that a further development of exchanges between France and her empire is most desirable.

The Special Commission on the Preferential Regime charged with the task of fixing the regulations of a preferential regime on metropolitan goods in the French colonies, investigated protectionist measures applicable to French products in the French overseas possession with special regard to the buying power of the natives. After a detailed survey of the conditions of production and marketing of a great number of metropolitan exportable products, the Commission reached the conclusion that the trade between France and her colonies is one of the chief elements in French export trade, and that to compensate, partially at least, the losses in French exports, it is necessary to increase the buying power of the colonies by an intensification of exchanges and by making the colonies and the metropolis complementary economic forces.

A plan which took into account both the budgetary exigencies of the metropolis and those of the overseas possessions was submitted to the Conference by the Commission on finance. This plan can be considered a fitting corollary to the work of the "Commission de soutien" and of the "Commission du régime préférentiel." The adoption of this plan entails considerable sacrifices on both sides but it assures the economic independence of the Empire. The conclusions of the General Production Commission whose task was to suggest a general imperial policy of production, aiming at intensifying metropolitan exports and at suggesting a better exploitation of the soil and subsoil of overseas territories and so to organise their production, consumption and exportations as to integrate the economy of "la France totale," leave no doubt that the French plan of imperial economy is destined to be a success. The overseas industrial production so organised as to be of benefit to the whole of the imperial economic system justifies the highest hopes of the restoration of the French trade balance.

A policy of agricultural production properly planned, directed and controlled "with a view to establishing a complementary Franco-colonial economy which will eliminate the risks of overproduction and internal competition, will improve the condition of colonizers and natives, creating at the same time (a) producers of raw materials and alimentary products necessary for the metropolis, and (b) buyers of metropolitan products, will save France every year several million francs heretofore spent in buying abroad agricultural products which the French Empire could and will provide for the metropolis if and as soon as the plan of valorisation of the colonial resources is effectively put into operation and pushed ahead with the required energy and perseverance.

It has already been observed that, from the beginning of the Conference, the most complete accord prevailed between the representatives of the metropolis and the delegates of the colonies, regarding the opportunity and the necessity of an imperial economic policy. But it was realised at once that the difficulties of a co-operation which would prove very costly, especially to the metropolis, for a considerable period of time, could more easily be overcome, if the French people and the natives of the colonies were made to understand that their sacrifices would be amply compensated by the economic independence of the Empire as a whole. It was then suggested that an active propaganda should be organised by the competent bureaux of the various branches of the Government acting together for the achievement of the same goal. "The colonies must be put in a position to be able to produce to their advantage the staple products needed by the metropolis" says the report of the "Commission d'outillage." "By increasing the buying power of the natives through the increase of the sale of their products, metropolitan exports will also increase. But the Government's assistance is necessary," says the same report, because a great deal of work will be needed to improve means of production and help to increase it: including agricultural hydraulic work, mining explorations, improvement of road machinery, building of railroads and ports. The execution of this plan requires financing and the support of the public opinion of the Empire. But the risk remains that these sacrifices will be useless unless a complete re-organisation of health and sanitary services in the colonies is effected. A special Commission on social assistance undertook the study of this problem and submitted to the Conference a plan of sanitary organisation accompanied by another plan dealing with the financial side of the whole problem in every part of the Empire. The valorisation of the colonies, says the report, is strictly dependent upon an improvement of the conditions of the natives, whose future must be insured by safeguarding them from the ravages of endemic maladies, lack of hygiene and undernourishment.

This summary survey of the works of the Economic Conference of Metropolitan France and her Colonies justifies the conclusion that nothing had been overlooked to put France in a position of economic self-sufficiency, no matter what may be the world economic trends.

V. F.

CARRARA Prof. Giovanni: Il contratto di mezzadria. R. Istituto d'Arte per la decorazione e la illustrazione del libro. Urbino, 1936, pp. 483.

The share tenancy agreement is found especially in Central Italy (Tuscany, the Marches, Umbria) where it is traditional and may be regarded as typical. The principles governing this form of land tenure have been fixed by the "general rules" relating to its regulation approved by the National Corporation of Agriculture in its meeting of 13 May 1933. The case is one of a special agreement constituting an associative bond based on mutual confidence, the typical quality of which is to guarantee collaboration and solidarity between the contracting parties. As such it is in full correspondence with the new spirit of collaboration between the producing classes, which is encouraged, in the higher interests of the Nation, by the Fascist Government, and represents, at the same time, an effective instrument of this collaboration. The contract consists mainly, on the part of the lessor (*concedente*), in the contribution of the use of the land, of his own work of management and of certain fixed portions of capital; on the part of the share tenant (*mezzadro*) and of his family, in the undertaking of the farm work, and in the contribution of fixed portions of capital, even if these

have been advanced by the lessor. By the lessor is understood the owner, tenant, holder in emphyteusis or in usufruct, who in person or through a legal representative or other deputy, grants the land in return for a share in the produce thereof (produce sharing lease). By the share tenant is understood the head (*capo* or *reggitore*) of a family community entirely dependent on him. He represents this community as direct and exclusive contracting party, and as the single holder of a general mandate which is tacitly understood and cannot be revoked, and this in respect of all that relates to the farm and to the relations with the lessor and his representative.

The essential elements of the share tenancy are the land organised under the form of a farm holding (*podere*) and the family of the share tenant. The *podere* is a territorial unit, equipped with a dwelling house for the family of the *mezzadro*, and provided with the subsidiary buildings, etc., required for the farm, and with the live and dead stock necessary to its working. The family consists of persons normally linked together by ties of relationship between whom a special association has been established in view of the farming of the land.

If the share tenancy is to give favourable results both in the interests of the contracting parties and in those of the associated group of persons, the equilibrium between the quantity of labour required by the land and the working capacity of the family of the tenant must be assured. The management of the farm so held rests with the lessor, who may exercise it in person or through persons placed in charge of it by himself. He is bound in any case to observe the rules of good farming technique and to fulfil all the duties which the Fascist Corporate State imposes on producers. The tenant is expected to organise and to direct, in accordance with the instructions of the lessor, the working capacities of his family, so as to secure their maximum output and in the interest of the highest productivity of the land. All products without distinction, whether ripened on the soil or above it, the live stock products, the products and the returns derived from industries and from stock raising carried on conjointly on the land, are divided between the contracting parties, as a rule on the basis of equal shares.

In the regional, provincial or zonal agreements of share farming drawn up, by common consent, by the syndical associations, the above provisions are supplemented in respect of local usages, so that the agreements may be entirely appropriate to the economic and technical conditions of the districts for which they have been concluded.

The work of Prof. Carrara deals with the subject in a complete and thoroughly exhaustive manner, since he gives separate treatment to the economic function, the juridical nature, the structure, sources and content of this form of land tenure, as well as to its extinction and to certain problems relating to the fiscal position of, the legal procedure in connection with, and the syndical and penal aspects of share tenancy. The numerous and often very complex questions which arise from this characteristic form of agricultural agreement are examined with scientific precision and with the utmost fairness, full consideration being given to the views of the eminent economists and jurists who have made a study of the same subject. A very full bibliography is added.

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THE WORLD AGRICULTURAL SITUATION, 1934-35

**(ECONOMIC COMMENTARY ON THE INTERNATIONAL
YEARBOOK OF AGRICULTURAL STATISTICS)**

This publication is intended to be an economic commentary on the International Yearbook of Agricultural Statistics, the object being to indicate the main tendencies of the economic situation in agriculture; to analyse from different points of view the position of certain branches of agricultural activity; to give some account of the action taken by the Governments in the different countries on behalf of agriculture, and also of the economic conditions affecting the farming classes.

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AGRICULTURAL PROTECTIONISM AND THE AGRICULTURAL SITUATION 1925-1929

PART. I. — ORIGINS AND EVOLUTION OF PROTECTION 1925-1929.

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I. — INTRODUCTION.

At the beginning of 1935, the Institute started the publication of a quarterly Bulletin entitled "Government Measures affecting Agricultural Prices" containing a summary of the measures taken in various countries with a view to combating agricultural depression. The present series of studies is intended to make a step further by seeking as far as possible, to bring out the origins of these measures of agricultural protection, to describe their evolution and to analyse their effects upon international trade in agricultural products, and, through it, upon world agriculture.

It is proposed, firstly to give here an outline of the origins and the course of agricultural protectionism from 1925, and then subsequently to include an annual review of its evolution and effects in the yearly issues of "The World Agricultural Situation."

Our account will begin from the period 1925-1929. During this period the conditions from which the agricultural depression of 1929 onwards was to develop, were gradually taking shape. A brief outline of this period will be followed by a more detailed account of the rapid growth of protection since

the outbreak of the crisis and of its gradual development into an intricate system of Government intervention and planning, with far-reaching effects upon agriculture both within the countries concerned and in the rest of the world.

The present study of the period 1925-1929 divides into two parts, the second of which will be published in a following number of the Bulletin. The first part deals more directly with the development of agricultural protection during these years, whilst the second deals with the general economic conditions of agriculture, and the evolution of international trade in agricultural products.

II. — GENERAL BACKGROUND OF EUROPEAN PROTECTIONISM.

The period 1925-1929 was essentially a period of readjustment during which it was sought to return on the basis of freshly stabilised currencies to what could be looked upon as normal economic conditions. Protectionism was evident, but not at first dominant. The tribute paid to greater freedom of trade and international co-operation, both at regular conferences at the League of Nations and at special international meetings such as the World Economic Conference of 1927, was not merely lip service covering conscious intentions of seeking a nationalistic way out of difficulties. That nationalism, and, later, extreme nationalism eventually triumphed was due rather to the pressure of circumstances which appeared to render a true internationalism impossible. The strong doctrinal defence of nationalism succeeded, rather than preceded the practice of economic nationalism in post-war years.

The war had left in truth an apparent chaos, or a structure, which, because of the vast changes brought about by it, could not be comprehended. Policy inevitably could not be founded upon a general understanding of these changes, but upon a piecemeal comprehension of the necessities of particular limited situations. First and foremost of these changes was the changed distribution of production and the loss therefore of the appearance of normality in the new distribution. The unaccustomed and seemingly unnatural structure of production was accompanied too by a monetary system in complete disorder. The quantity of money, interest rates, exchange rates, prices, capital movements, all presented aspects of a situation the entirety of which was unfamiliar and confusing. The system of tariff and protection, built upon comparatively moderate pre-war notions of the directive influence of the State, had lost all relation to those original notions. All these things had to be considered, and considered quickly in an atmosphere in which political passion was liable to run high. They were considered, each problem by itself and provisionally, and the combined resultant of these separate acts often brought about situations which could not be foreseen.

Perhaps the most general feature of the policies in these separate fields was the belief in the necessity to attempt a return to the normal ways of the pre-war economic system. The picture of pre-war years consisted of a stable monetary system, a not prohibitive level of tariffs, a beneficial flow of trade and migration between nations, and balanced budgets. Consequently post-war legislation after the immediate breathing space was directed to securing a stable monetary system based on the gold standard, tariffs at an effective pre-war level and balanced

budgets. Attempting these objects separately resulted in the frustration of most attempts, and probably contributed to bringing about the world economic crisis.

It is in the light of these considerations that the protectionism of the period 1925-1929 must be interpreted. Roughly from 1925 to 1927, a period in which the possibility of a restoration of pre-war prosperity was not regarded as too remote, tariff legislation and protectionism were not on the whole more nationalistically conceived than in pre-war years. Up to then, indeed, if we exclude the consideration of the new countries created by the war, protection had indeed become less effective and less burdensome than before the war. The prohibition and special legislation of the war period had been removed, but the tariff structure was not yet adjusted to the new conditions, for tariff rates in general, both in agriculture and in industry, necessarily lagged behind the immense rise in prices succeeding the war. Adjustments to tariffs were moreover made not on a long-term basis but often to meet the temporary exigencies of changed monetary conditions. Permanent revisions were thus in many cases rationally enough postponed in the hope of a period of normalcy returning to which a normal tariff structure could be fashioned. Lagging behind was inevitable and weakened the effect of protection. But, to attempt to return to normalcy, it was believed that the first step had to be a return to monetary stability, implying the gold standard and budgetary equilibrium. This implied incidental changes in tariffs, which were thus inspired to a large degree by monetary considerations rather than by purely protectionist intentions. That is, the attempt at achieving monetary stability subordinated a rational tariff structure.

Generally speaking, then, at the level of prices prevailing during the period of monetary stabilisation, tariff rates, even when nominally high, were not effectively higher than before the war. Tariffs were raised to achieve the double purpose of budgetary and financial rehabilitation, and to restore the pre-war level in protective effectiveness. Unfortunately these two objects were not necessarily compatible, and this had serious effects on international trade. For once monetary stabilisation was obtained, partly with the assistance of tariffs which were not intended to be too burdensome, then prices, because of the ever increasing quantity of goods, and because, in many cases, of the deflationary measures necessitated, were bound to fall. This meant in its turn that tariffs were becoming more burdensome than intended. And with the fall in prices particularly of agricultural products, after 1927, a downward revision of tariffs became politically, if not economically, impossible. And only then did international trade begin to shrink.

This indeed represents the general state of affairs: monetary stabilisation was achieved at the expense of free trade. Broadly speaking, the price fall which began in 1927 increased emergency tariffs and again postponed general revision on a long term basis. The difference between the beginning and the end of the period 1925 to 1929 was that prices were lower and tariffs were higher. And it is difficult to claim that this was the result of an autonomous growth in the nationalistic spirit.

Necessarily however, the treatment of agriculture and industry was not the same. Generally, if agricultural protectionism shewed a more definitely upward

and less stable trend than industrial (I), the reason is not far to seek. The redistribution of production throughout the world as a result of the war was mainly a transfer of agriculture to non-European lands. Industry, it is true, was reorganised to meet war needs, but the relation of industrial capacity in Europe and in the rest of the world did not change in anything like the same proportion, as the relation of European and non-European agriculture. And if the aim had been merely to restore in Europe the pre-war balance of industry and agriculture, agricultural protection would necessarily be heavier than industrial. It may be noted that, broadly speaking, the new protectionism in the non-European countries was in the same way directed against the perpetuation of the economic results of the war, for heavy industrial protection in these countries, though more often based on other doctrines, in effect tended to prevent the relative industrial advantage of Europe fulfilling itself. It is in the non-European countries that the outcry against the "scissors" movement began. And it is easy to see how the movement was stimulated by protection. The farmer in America and elsewhere was hit by European protection of agricultural products and by domestic protection of industrial products which he needed.

Examples however are not lacking in which in Europe agricultural protection was not increased, whilst industrial protection was. European countries sought not only to protect their industry and agriculture against extra-European countries, but also against their more proximate neighbours. The circumstances of European countries varied, and they were not all at the same stage of development. In Italy, the revised tariff of 1921 almost entirely neglected the protection of agriculture, and indeed imposed higher protection on agricultural machinery. It was not until after 1925 that this policy was reversed, at least one part of it, for heavy duties were re-imposed on wheat (2). European countries which were predominantly agricultural or were on balance exporters of agricultural commodities were naturally more interested in industrial than in agricultural protection. And this had the same effect on their farmers as in America. Again, states like Czechoslovakia whose industries were particularly affected by the change in frontiers were concerned at first to assist industry by protectionist methods.

Thus there were conflicting tendencies, but the trend is clear. Agricultural protection in Europe and industrial protection outside Europe, tending together towards the pre-war economic structure. Such a result however, as our study of the situation in various agricultural markets (Part II) shews, was not fully obtained by 1929. The distribution of production only gently follows this trend towards the pre-war structure. The meeting of the difficulty was postponed by such devices as subsidies and holding of stocks, though prices were still allowed to fall. But when the price fall became severe, protectionism then really became a weapon of desperation and lost its moderate character. But we may

(1) See "Considerations on the present evolution of Agricultural Protectionism," p. 16.

(2) See below.

recognise the difficulties of a rational control and ordering of the world economy at that period. With all the goodwill possible, the World Economic Conference of 1927 could not have succeeded.

III. — TARIFF POLICIES OF FRANCE, GERMANY AND ITALY.

Naturally no one country shews all these tendencies together. It is indeed impossible to find any general formula into which every particular case fits perfectly.

For these general phenomena necessarily worked themselves out in the varying circumstances of each individual country. The circumstances of the three largest European countries, France, Germany and Italy, were different in important respects, and these differences reflected themselves in concrete measures of policy. The development of European trade relations may most easily be grasped by a study of these three countries. Apart from the factors which we have noted in the preceding section, these policies were governed by the facts that France was predominantly an agricultural country, whose production was either just a little short or a little in excess of home consumption; Italy both imported and exported large quantities of different agricultural commodities, whilst Germany was the most mixed economy of the three. The importance of these three countries in the European markets may be seen from the following figures.

TABLE I. — *Imports into France, Germany and Italy and United Kingdom (Average 1925-1929) as a percentage of total imports into Continental Europe (1).*

	France	Germany	Italy	United Kingdom
Wheat (2)	10.1	20.1	19.8	50.0
Rye	2.1	24.0	—	—
Barley	2.3	63.4	—	26.5
Oats	9.0	23.3	9.8	33.3
Maize	10.9	17.1	9.0	27.7
Butter	2.5	81.5	—	220.0

Thus these three countries are seen to have taken a substantial proportion of the total imports of all continental European countries. The importance of free trade in these years however can be seen from the fact that the United Kingdom imported half as much wheat as the whole European continent, a third as much oats and more than twice the quantity of butter. On the continent, the free trade countries of Belgium, Holland and Denmark imported together close on 20 per cent. of the wheat and barley imports into European countries, and over 30 per cent. of the maize imports. Thus the importance of France, Germany and Italy among the protectionist countries was outstanding; but the proportion of trade meeting no trade barriers was very high (2).

(1) I. e. less imports into United Kingdom, the largest single importer, but which at the same time practised a free-trade policy. — (2) Wheat and wheat flour.

(2) It should however be remembered that a greater proportion of the trade would go to the free trade countries the higher the degree of protection in the protectionist countries.

Bearing in mind therefore the different economic, technical and geographical backgrounds, we may turn to the examination of their separate commercial policies for respective agriculture during these years.

IV. — TARIFF POLICY OF FRANCE.

The immediate post-war period in France had been characterised by the removal of import prohibitions established during the war and by the adoption of the system of coefficients of increase, by which specific tariff rates were multiplied by a coefficient in the ideal case proportionate to the increase in value of the imported article. The coefficient system was introduced by the decree of 8 July 1919, abolished by the decree of 3 May 1920 and re-established, but with a new schedule of coefficients, by the decree of 29 June 1921. The French conception of a tariff which afforded equal protection was unambiguous. The tariff rate must equal a given factor of the value of the commodity. *Ad valorem* duties however were not easily adopted under the French customs system, and the less flexible system of coefficients was introduced. The system was less flexible because modifications of the coefficients could only be brought about by special parliamentary action. The coefficients established by the decree of 29 June 1921 for cereals and their flours however were uniformly 2, that is, the existing pre-war tariff was nominally doubled. These coefficients were comparatively low and it may be noted that the coefficients in many industrial goods increased their tariff rates six-and sevenfold.

From this date until December 1922 further decrees were issued, some increasing the coefficients and others raising the general rates. Agricultural commodities however were not treated as favorably as industrial, and the tariffs on the major agricultural articles were at this early period relatively stable. In December 1922 the government's power to modify tariffs by decree lapsed, and from that date until 1926 tariff legislation on the whole was very much reduced. But nevertheless notable changes took place in agricultural tariffs, for the decrees of 6 January 1924 and 20 September 1924 the coefficients of increase were suspended in the cases of a number of agricultural goods, including wheat, barley and butter. Also, by other decrees, particularly of 28 April 1924 large export duties were imposed on a number of agricultural commodities, chiefly dairy and poultry produce. The subsequent tariff changes must be seen in the light of the absence of tariff legislation in the preceding years and of the troubles of the French economy which at this time were at their worst.

By 1926 French finances were in a very dangerous condition, and the committee appointed in May to study the situation recommended that tariffs be raised as a mean of raising revenue, and as well, to restore the prewar level of production. Tariffs had already (6 May 1926) been increased by 30 % but even then, according to the experts, "the French customs duties represent at present less than half in amount those existing in 1913, if account be taken of the rise in prices and the depreciation of the franc" (1). Following the recommendations of the Commit-

(1) Report of the Department of Overseas Trade 1927, p. 55.

tee, tariffs were again raised generally by 30 % (August 14, 1926), whilst the law of August 3 gave the government power to increase tariffs up to six times the pre-war level, which it did in the case of many industrial products. But from this second increase in 1926 of tariffs by 30 %, many agricultural commodities—including wheat, rye, cheeses, fruits and vegetables—were exempted.

Thus even at this time tariff legislation was more related to monetary and industrial considerations than to agricultural. The problems of agricultural protection were hardly given separate consideration, and, agricultural tariffs had still increased by less than many industrial tariffs.

Work on general tariff revision was begun as early as November 1922, but a bill was not introduced until 1924. Subsequently modifications were continually introduced in fresh bills, until finally a new bill was introduced in 1927 but again allowed to drop. But commercial policy was not only exemplified by the spasmodic and widespread changes in the general tariff rates but to an equally important degree by the negotiation and conclusion of a number of trade agreements, and so thoroughly did these agreements cover the ground that in effect they constituted a revised tariff, and indeed, the many lessons learnt in the attempt at revision were incorporated in these agreements.

To illustrate the structure of the agreements and French treatment of agricultural imports, we may take the Franco-German agreement of August 1927, the decree of 17 November 1927, the Franco-Swiss agreement of 21 January 1928, the Franco-Italian agreement of 7 March 1928, the agreement between France and the Belgo-Luxembourg Union of 23 February 1928 and the Franco-Austrian agreement of 16 May 1928, and the tariff laws of 2 March 1928, 23 May 1929 and 18 July 1929.

(a) *The Franco-German Agreement.* — The agreement split the French tariff into four parts, to which different treatment was accorded. Firstly (Schedule A), the minimum tariff in force at the time of signature (17 August 1927), secondly, the new minimum tariff (Schedule B), thirdly an intermediate tariff (Schedule C) comprising reduction in the general tariff and fourthly, a fixed tariff, allowed only to vary if the prices of the relevant commodities changed by more than twenty per cent (Schedule A, B, and C with the exception of certain items introduced in a fourth schedule D).

It might be noticed how currency changes and the unfamiliar price situation resulted in Europe in a new conception of a sliding scale tariff. In the nineteenth century, the purpose of a sliding scale tariff had been to prevent tariffs becoming too protective, so that as prices rose tariffs would be lowered, and vice-versa. In the post-war period, in many cases the conception of a "too protective" tariff had changed, so that it was thought that if prices rose then tariffs should rise also — though again, the converse only rarely held. Under the new conception of a sliding scale tariff, tariffs could mostly only "slide" upwards.

An agreement constructed on the above plan certainly tended to have a stabilising influence, but the treatment of agricultural commodities is interesting. These came principally under schedule A, but also constituted the exceptions of schedule B, so that the agricultural rates were freer to move than industrial. Modifications were in fact introduced in certain of these agricultural rates by the

decree of 17 November 1927. The agricultural commodities coming under schedule *A* included livestock—cattle and pigs—cooked meats, fats, eggs, milk, cheeses, vegetables, fruits and seed grains, hops, beetroots and spices. Cereals were however not affected by the measures. Though schedules *B* and *C* did not include agricultural commodities it is interesting that schedule *B* included, besides chemicals, agricultural machinery and implements.

The agreement further resulted in the reciprocal granting of the most favoured nation treatment, as from 15 April 1928.

By virtue of the large number of items included in the agreement it can be said to have had a stabilising and in a certain sense a liberalising influence on the French tariff. But this applied principally to manufactures and industrial goods. The goods which were included in schedule *D*, the tariff rates on which were free to move on the condition cited, were principally cereals and cereal flours, livestock, meats, dry vegetables and their flours and colonial products (coffee and spices).

(b) *The Decree of 17 November 1927* increased tariff rates on cattle, sheep, goats and pigs, on beef, mutton, and pork, on wheat, rye and flours to an average of approximately four times the pre-war levels. This was effected however by the simple method of raising the coefficients of majoration of the general tariff of 1910 to 4 in the case of cattle, 3.6 in the case of meats and 5 in the case of grains and flours.

(c) *The Commercial Agreement with Switzerland* of 21 January 1928 which was ratified on 25 February 1928, modified the agreement of 1906 by an article according the benefits of the minimum tariff on a number of commodities, with however the same provisions as in Art. 4 of the German agreement allowing freedom should prices change by more than twenty per cent.

The agricultural commodities affected included livestock, milk, fresh and condensed, cream and cheeses. The Swiss agreement was the direct outcome of the Franco-German agreement, which had placed Germany in a relatively favourable competitive position. Thus the German agreement led to further reductions.

(d) *The Franco-Italian Agreement* of 7 March 1928 also resulted in important reductions, in agricultural as in industrial duties. Certain goods, including rice, were excepted from the two increases of 30 per cent. made in 1926 and others, including agricultural commodities, were reduced—principally condensed milk, cheese, fruits and ham.

(e) *The Belgian Agreement* of 23 February 1928 related principally to manufactured goods, but, by virtue of the maintenance of the most favoured nation clause, the reduction in the French tariff on agricultural commodities automatically were accorded to Belgium.

(f) Lastly we may cite among the various agreements those with *Austria* concluded on 16 May 1928 and with *Lithuania* (20 July 1928). Up to that time most Austrian goods entering France had been paying the general tariff rate or an intermediate tariff rate. By this agreement the duties were reduced to the minimum rates. Certain agricultural commodities were however excluded, among which we may note those on poultry, game, fruits and butter. To Lithuania was accorded the minimum tariff on meats, dairy and poultry produce.

(g) The *Tariff Law of 9 March 1928* incorporated in the basic tariff many of the changes which had occurred up to that period, and defined the rates then in operation with respect to a number of commodities. The state of the tariff at that date on the major agricultural products can be gathered from this law and the decree of November 1927. By comparing these rates with the rates as defined in the general tariff of 1910 the significance of the changes since the war can easily be grasped. The table below shews the maximum and minimum rates in 1910 and 1928. It should be remembered that the maximum rate, because of the treaty activity during these years had, in effect, become largely obsolete. The rates most often changed were usually minimum or intermediate.

It will be seen from the table that minimum rates had by 1928 been increased five-fold—that is, roughly in proportion to the depreciation of the franc. It will be seen also that in every case prices were on the average in 1928 more than five times their pre-war level, so that the weight of the tariff was still somewhat less than in pre-war years.

TABLE II. — *French Tariff Rates and Prices 1913 and 1928 (a).*

Commodity	1913			1928		
	General Tariff Francs per quintal	Minimum Tariff Francs per quintal	Average (1) Price Francs per quintal	General Tariff Francs per quintal	Minimum Tariff Francs per quintal	Average (1) Price Francs per quintal
Cattle	30	20	75	200	100	875
Calves	40	25	—	200	100	—
Sheep	40	25	90	250	125	850
Pigs	25	15	120	150	75	700
Mutton (3)	50	35	255 (2)	350	175	1,112 (2)
Pork (3)	40	25	185 (2)	250	125	1,634 (2)
Beef (3)	50	35	177 (2)	350	175	844 (2)
Wheat	7	7	20.95	35	35	148
Wheat flour	12	12	35.85	60	60	211
Rye	3	3	15.80	30	15	118
Oats	3	3	17.15	15	15	105
Barley	3	3	15.90	15	15	125
Maize	3	3	15.10	10	10	110
Butter (fresh)	30	30	300	200	200	2,010
Sugar	25	25	29	97.50	97.50	147

It should be recalled that the franc had been rising throughout 1927 and was stabilised in that year. Thus only by the end of 1927 and the beginning of 1928 were tariffs on agricultural commodities proportionate to the depreciation of the currency.

From this time onwards a number of modifications in the agreements concluded in 1927 and 1928 were made, but otherwise tariffs were stable until 1929, that is, during a period of falling prices. In 1929 the decree of 18 July

(a) Taken from *Bulletin International des Douanes*, November 1912 and *Die wichtigsten landwirtschaftlichen Zölle des Auslandes*, 1928. — (1) *Annuaire Statistique de la France*, 1931. Average price on importation. — (2) Wholesale price on internal markets. — (3) Fresh, even chilled.

reduced the coefficients of increase on some of the most highly protected agricultural commodities. The coefficients on livestock were lowered to 4, on meat to 3.6. The coefficients in the case of cereals however remained at 5.

Thus the commercial policy of France during these years is characterised more by a desire to return as nearly as possible to pre-war ways of life, rather than to institute new forms. By pre-war standards it is impossible to accuse France of excessive economic nationalism.

The familiar pre-war conception of the French economic system as of a well balanced distribution of industry and agriculture was a long-run conception. It implied stability and regularity and the entering of stable and regular relations with other countries, not to be renewed simply at the will of any one country. Commercial treaties, rendered ineffective by the war, were gradually being restored after painful negotiation, on the basis of the most favoured nation clause. France attempted to follow this procedure, and the fact that she did so paradoxically enough diminished the possibilities of meeting the crisis after 1929 on an international basis. Her control of imports since then, as in the case of most other European countries, was effected within the conditions of the treaties, which established only tariff rates, but by arbitrary quantitative methods (1). Certainly by comparison with the protectionism in the years after 1929, nationalism in French commercial policy was not excessive.

V. — TARIFF POLICY OF GERMANY.

The post-war tariff history of Germany up to the beginning of the world depression was affected particularly by the consequences of the treaty of Versailles. In this respect the treaty had a two-fold effect, firstly the limitation of tariff movements until 1925 and secondly, the loss of territory which before the war had accounted for nearly one-tenth of German agricultural production. Both these facts diminished the effective protection, firstly by making it less possible and secondly, less desirable. Further, foreign trade had been drastically cut down, partly as a natural result of the war and partly by the immense depreciation of the currency.

Germany, even for many decades before the war, had never been practically inspired by free trade doctrine and ideals, and tariff policy had much more been governed by the doctrine of Friedrich List and his school. By the end of the last century and up to the war protectionism both of industry and agriculture grew ever more severe. This trend was interrupted by the war and the peculiar circumstances following it. As these gradually were brought into order, the old trend was reassumed. And, broadly speaking, as in the rest of Europe, so in Germany, the prewar methods were adhered to in the period 1925-1929.

As in the case of France, much of the tariff policy and its underlying doctrine is revealed in the renewing of trade agreements which again, on the most favoured nation principle, sought to restore pre-war methods of regulation (2).

(1) See HAIGHT. *French Import Quotas*, London, 1935.

(2) See M. SERING. *Die Deutsche Landwirtschaft*, p. 832.

It should also be recalled that from 1925-1928 in spite of reparation payments Germany had a passive balance of trade, resulting from the heavy borrowing during this period. This borrowing itself resulted in a large import surplus not only in raw materials and other goods which were to assist as finished goods for export in the later settling of Germany's foreign accounts but also of agricultural products and food-stuffs. To understand the commercial policy of Germany during these years, all these facts must be taken into consideration. The influence of the reparations payments, through their working on the German financial situation, throughout the whole post-war period up to the present day further cannot be underestimated. The development of agricultural protection as a result primarily of these factors is described in the following.

In the Treaty of Versailles the clauses particularly affecting customs and tariffs regulation came under Part X, Economic clauses, Articles 264-270, and 280. They provided chiefly that (a) no discrimination in respect of tariff policy should be applied in whatever form against the Allied Powers; (b) that freedom from any duty should be granted for defined periods to products from the previously German territories of Alsace-Lorraine, of Poland, and from Luxembourg. In these cases freedom of duty was to be granted only on pre-war quantities; (c) lastly, clause 269 provided that for the first six months after the conclusion of the treaty no duties should be imposed higher than pre-war duties, and that for another period of thirty months this provision should apply to the goods comprised in Section A of category I of the German tariff of 1902, *i. e.*, agricultural and horticultural products, including cereals, vegetables and fruits, though not livestock or animal products. Under Art. 280 all restrictions should cease not later than January 1925.

The restrictions imposed on Germany's freedom were thus theoretically at least very severe, and certainly precluded the entering into stable and definitive arrangements with other countries. But in actual fact, a high level of protection was maintained in spite of the provisions of the treaty. Firstly, the law of 21 July 1919 provided that all duties should be paid in gold marks or in their equivalent in paper marks. A system of coefficients, varying from week to week, was adopted. The first coefficient of increase was 2.4, in October 1921 it had risen to 20 whilst in December 1922 it reached the figure of 1,750. Secondly, the methods of licensing imports was adopted, a method which was used in place of the tariff for similar purposes. Restriction was placed by this method however principally on manufactured and luxury articles, whilst raw materials and foodstuffs and more essential articles were not specially restricted. The policy of restriction, established by the law of 27 March 1920, under which licences were required both to import and export, was also intimately bound up with the monetary situation and was designed to prevent the flight of capital.

By the use of these two methods it was open to Germany to pursue a strongly protectionist policy. But the necessities of the economic situation prevented such a policy at least in agriculture, and during these early years tariff rates were actually lowered. In April 1922 a codification of the reductions in tariffs was published (1)

(1) Reichs-Zeitung, 24 April 1922.

and included in the list of goods allowed free entry all the important cereals, livestock, dairy and poultry produce, fats and sugar. And in 1924 and 1925 decrees lowered or removed tariffs on cane and beet sugar, malt, phosphates and other products of interest to agriculture.

Thus by 1925 both through the Treaty of Versailles and through economic necessity, tariffs, particularly in agricultural products, were not effectively as high as in pre-war years. In 1925 tariff freedom was obtained, the mark had been stabilized since 1923 and the pressure of agriculturists for the restoration of tariffs had become very strong. A basic feature of the German tariff had for decades before the war been the tariff on rye, the main product of the large estates. The difficulties facing the rye producer as a result of the loss of the tariff and of the growing substitution of wheat gave rise to considerable pressure for restoration which eventually proved irresistible. Further the principle on which German commercial treaty policy was based was that of obtaining for Germany the advantages of the most favoured nation. To achieve this it was argued that a high tariff must be established in order to be able effectively to bargain. It is interesting that where tariff freedom was obtained the licensing system was given up, and in October the Reich commission for import and export licenses was abolished. The pre-war method of tariffs was held to be better.

Consequently, the first important revision of the tariff, in the law of 17 August 1925 saw increases in the rates on both industrial and agricultural products, whilst subsequent tariff changes made modifications both in an upward and downward direction. Under the same law of 1925 the duties were to be paid in the new Reichsmark and since many duties were still left unchanged and since prices generally were higher, the effectiveness of protection was less. Subsequent changes were not designed however only to restore an equal degree of protection, but, in many cases, to go beyond this.

The trend of protectionism in agricultural commodities can be seen from an examination of the conventional tariff rates in the laws of 17 August 1925, 10 July 1926, the orders of 20 July 1926 and of 18 and 25 September 1926, the further modifications published on 30 March, 7 April and 15 July 1927 and various other measures in the same period raising tariffs on fruits and vegetables. By the end of 1928 very few agricultural tariffs had not been affected by legislation.

The law of 17 August 1925 established duties of 3 marks per quintal on rye, maize and barley, of 3.50 marks per quintal on wheat. Rates on livestock were particularly high, as also on meats, butter and flour. Thus duties on cattle and sheep averaged 13 marks per quintal, on pork 21 marks, on other meats 24 marks. Butter was raised to 22.50 marks, whilst a duty of 10 marks was imposed on both cane and beet sugar. The tax on cheese in this tariff amounted to 40 marks per quintal.

The law of 10 July then raised the tariffs until the end of the year on rye, wheat and oats to 5 marks. In the succeeding order of 20 July the minimum duties on meats were raised above the pre-war tariff to 37 marks per quintal.

The orders in the following September dealt with vegetable and horticultural products, and again the rates moved upwards. The measures of March and

April 1927 then raised the tariffs on flours to 11.50 marks per quintal, and in July these were again raised to 12.50 marks.

The rates quoted above were the conventional or minimum rates accorded to those countries granting Germany treatment of the most favoured nation. In most cases the general rates were much higher, and though the conclusion of a number of treaties secured the application of the conventional rates, the fact that these were continually being adjusted upwards tended to vitiate the otherwise liberalising effect of such agreements.

By 1928 the conventional or minimum tariff had reached a substantially higher level than in pre-war years. In the following table pre-war rates on certain agricultural commodities and rates existing in 1928 are compared, together with the prices of the commodities and the unchanged general tariff rates. It will be seen on calculation that in a number of cases the tariff had increased by a greater proportion than prices, particularly in livestock and meats, though this was not the case in wheat.

TABLE III. — *German Tariff Rates (a) and Prices 1913 and 1928.*

Commodity	General Tariff Marks per quintal	Convention- al Tariff Marks per quintal	Average Price (1) Marks per quintal	General Tariff Marks per quintal	Convention- al Tariff Marks per quintal	Average Price (1) Marks per quintal
Wheat	7.50	5.50	19.50	7.50	6.50	23.40
Rye	7.0	5.0	16.25	7.0	6.0	23.90
Barley	7.0	4.0	18.30	7.0	5.0	21.50
Oats	7.0	5.0	16.65	7.0	6.0	22.65
Maize	5.0	3.0	14.60	5.0	2.50	21.95
Cattle	18.0	8.0	103.80	18.0	16.0	114.20
Sheep	18.0	8.0	83.80	18.0	16.0	97.0
Pigs	18.0	9.0	114.60	18.0	16.0	129.0
Beef	45.0	27.0	165.0	45.0	37.50	186.50
Pork	45.0	27.0	139.20	45.0	32.0	172.0
Butter	30.0	20.0	251.70	30.0	27.50	359.20
Sugar	8.0	—	23.40	8.0	—	40.75

VI. — TARIFF POLICY OF ITALY.

Italy in particular was one of the countries in which industry had made great progress during the war, and one of the main aims therefore of immediate

(a) Source: Bulletin International des Douanes, October 1913 and Die wichtigsten landwirtschaftlichen Zölle des Auslandes, 1928. — (1) Statistisches Jahrbuch, 1930. VIII. 7 (pp. 280-283).

post-war legislation was to preserve this progress by means of protective legislation. The tariff in force up to the beginning of the war was that of 1887, and consequently, even, before the war, was considered to be in need of revision. Tariff revision was then one of the first tasks of post-war reconstruction, and the new tariff of 1921, combined the pre-war need for finer classification with the post-war need for industrial protection and for a system which took into account the changes in prices since 1914.

The dominant note of the tariff of 1921 was high protection of industrial commodities, achieved by the adoption of a system of coefficients of majoration, by more minute classification of the tariff items, and by the maintenance of the tariff in terms of gold lire. Agriculture however, was not assisted to the same degree by the tariff. Many agricultural commodities were indeed exempted from duty, whilst the low duties on cereals were suspended. Further, heavy duties were imposed on agricultural machinery of all kinds.

The immediately succeeding years was a period of great activity in commercial policy, and in effect the lines followed tended to modify the unfavourable treatment of agriculture, not only, however, by the imposition of duties, which however were generally low, but also by the conclusion of commercial agreements, which exchanged reductions in the Italian industrial tariff for tariff concessions on Italian agricultural exports. Even however in the conclusion of treaties with such countries as Switzerland, concessions were also granted on agricultural imports. Of the former kind we may cite the agreements with Czechoslovakia in 1921, with Austria in 1923, with U. S. S. R. in 1924 and with Germany in 1925. Treaties lowering tariffs on agricultural commodities included those with France in 1922 and Finland in 1924. In the treaty with Germany important concessions were granted Italian exports in return for reduction in the Italian tariff on industrial products averaging thirty five per cent.

The conventional tariff indeed in some cases resulted in reductions of the rates on agricultural commodities of fifty per cent., as on livestock and meats, the general duties on which up to 1925, though rising, were not exceptionally high. We may cite a few examples which shew the level which tariffs on agricultural products other than cereals had reached in 1925. On bullocks the general tariff stood at 30 gold liras per head, on steers at 40 liras, the general tariff on cows stood at 28 liras per head, whilst the conventional tariff equalled only half of this. Similarly the general tariff on calves stood at 20 and the conventional tariff at 10 liras. Tariffs on small pigs stood at 4.5 liras and on grown pigs—over 20 kilogrammes—at 15 liras per head. Frozen meats were admitted free, but fresh and chilled paid a duty of 7.50 liras per quintal. The duties on cheese and butter stood at 37.50 and 18 liras respectively. With the exception of this last and the duty on sugar, which stood in 1925 at 9 liras per quintal (first class) the above duties remained unchanged throughout the period.

Though to a certain degree these measures resulted in assistance to Italian agriculture, they did not assist the producers of those commodities, chiefly cereals, in which Italy had a large import surplus and to which over one third of the arable land was devoted.

Once again the stimulus to protection came from an unsatisfactory monetary situation. Up to 1925 the instability of the lira was very marked depending on, among other factors, the variability of the wheat harvest. From 1922 to 1925 the average paper price of gold rose from 410 per cent to 486. Wheat imports during the same period were at a level far exceeding the pre-war level. In 1922-1923 net imports of wheat (1) equalled 32 million quintals, in 1923-24 20.9 million quintals and in 1924-25, 25.7 million quintals as compared with a pre-war average of 15.5 million quintals. The already considerable depreciation of the lira was then increased by the failure of the 1924 wheat harvest, which amounted only to 46 million quintals as compared with 61 millions in 1923 and 50 million quintals in pre-war years. The value of the wheat imports averaged more than half the deficit in the balance of trade.

These facts, together with the predominance of the notion that in such a vital commodity as wheat it was necessary for Italy to be as independent of foreign sources as possible, led to the inauguration of the famous "wheat campaign," or the organisation of assistance to farmers both in production of wheat and in obtaining a favourable price. Endeavours were made by the organization of instruction to farmers to increase the yield per acre, and commercial assistance was given by the re-imposition of the tariff of 7.5 gold liras per quintal. The harvest of 1925 was an exceptionally good one (65.5 m. qls.) and the tariff was designed to prevent too great a price fall by the reduction of imports. These two factors succeeded in reducing the level of imports in 1925-26 to 18.9 million quintals. The duties on the other cereals, which had from 1921 been suspended, were then re-imposed by the same measure in September 1925, at the levels of 4.50 liras on rye, 4 liras on barley and oats, 7.50 liras on white and 1.15 liras on other maize.

During 1926 the lira, however, again slumped and then a determined effort to stabilise it at a high level was made, both by pure currency methods and by the discouragement of imports and by tariff increases. Stabilisation was achieved and the return to the gold standard made at the end of 1927, the lira returning to gold at the rate of 3.67 new gold liras to one pre-war lira. The deflationary process required to make this possible was necessarily very severe. Prices indeed—especially of wheat—fell heavily, but consequentially other agricultural products at the end of 1926 as a result of the heavy selling when the new policy was made known. The index of wholesale prices fell from 654 in 1926 to 527 in 1927 and 491 in 1928.

The effect of this revaluation on the tariff situation was highly important when measured from the standpoint of the Italian importer. The tariff had been fixed in gold liras which implied that the amount to be paid in paper liras averaged in 1925 some 4.86, in 1926 some 5.0, in 1927 some 3.8 and in 1928 3.67 times the number of gold liras.

Under the royal decree of 21 December 1927 the rate at which the tariff in gold liras should be multiplied to determine the amount of currency equivalent

(1) Excluding flour, of which Italy normally has an export balance.

was fixed at 3.67 liras, *i. e.* corresponding to the revaluation of the lira, and thus keeping the gold value of the tariff stable, and diminishing the tariff as measured in paper liras. Though prices fell heavily, they did not, after the fall in 1926, fall again in proportion to the rise in the value of the lira, and this implied that the effective tariff as measured by the relation of tariff to prices, would actually have diminished.

The treaties, again, were almost uniformly concluded on the most favoured nation principle which again implied that during this period tariffs were effectively decreasing. It has been estimated (1) that the concessions made by Italy, affecting over one-third of the items in the tariff, or one quarter of the total imports, averaged some 45 per cent. When it is also considered that some 40 per cent. of the total imports, being raw materials, were admitted free, the importance of these concessions can be grasped.

This fact however did not result in increase of tariffs on agricultural products generally, and was then outweighed by the continued price fall in 1929. The duty on wheat, however, which constituted the most important item in the structure of agricultural protection was raised in September 1928 to 11 gold liras per quintal, and that on wheat flour to 16.75 liras, whilst in May 1929 the duty on maize was raised to 14 liras and on wheat flour and maize meal to 20.30 liras per quintal, and these, together with the fall in prices, implied a heavy increase in protection. In 1926 the wholesale price for soft wheat averaged 200 liras per quintal (1). The tariff of 7.50 gold liras meant, on the average some 37.50 paper liras, so that the tariff bore to the price the relation of $37.50 = 18.5\%$. In 1929 the price of wheat averaged only 130 liras and the tariff stood at 11 gold liras or some 40.40 paper liras, so that by the same calculation the tariff equalled some 31 % of the price.

Tariffs on butter and sugar were also varied between 1925 and 1928 and stood in 1928 at 33 and 18 liras per quintal respectively.

Thus Italy again provides an example in which the heavy burden of tariffs came less as a result of deliberate protectionist policy and more as a result of monetary reorganisation.

APPENDIX.

The following table gives the minimum rates on certain cereals, meats and dairy produce and sugar in the European countries in 1928. The tariffs are expressed in gold francs per quintal and it is thus possible to compare the height of tariffs in the different countries. The table also gives the average price in London of each commodity.

(1) *Annuario Statistico* 1930.

TABLE IV. — *Minimum Tariff Rates in 1928 (*)*.
(in Gold francs per quintal)

Countries	Rye	Wheat	Barley	Maize	Beef (frozen)	Pork	Butter	Eggs	Sugar
Germany	8.75	9.37	8.50	6.25	56.25	56.25	37.50	7.5	16.25
Austria	4.24	4.24	3.17	free	15.89	38.12	63.55	8.47	17.70
Bulgaria	0.85	0.85	2.85	0.85	34.00	34.00	68.00	11.34	22.66
Spain	12.11	10.10	10.10	10.10	30.20	24.22	151.44	10.10	60.57
Estonia	free	10.22	free	free	3.91	2.66	free	free	17.39
Finland	6.58	9.86	6.57	0.66	7.89	17.75	26.30	65.76	36.17
France	3.09	7.20	3.09	2.06	18.51	25.71	20.57	4.94	20.06
Great Britain	—	—	—	free	—	—	—	—	14.87
Greece	6.37	7.84	5.10	6.37	39.20	24.50	107.80	free	39.20
Hungary	6.14	6.67	5.30	2.11	105.89	47.65	105.89	8.47	27.52
Italy	4.56	7.60	4.05	7.60	free	7.60	33.44	free	18.24
Latvia	free	7.07	free	free	20.21	20.21	free	14.15	20.21
Lithuania	5.20	15.60	10.40	10.40	5.20	26.00	208.00	5.20	15.60
Norway	free	4.60	free	free	62.80	52.34	52.31	104.66	44.66
Holland	free	free	free	free	22.62	free	free	free	59.97
Poland	free	free	free	free	8.79	8.79	7.32	1.76	29.27
Sweden	5.19	5.19	5.19	free	0.82	16.84	28.06	free	14.04
Switzerland	0.60	0.60	9.51	0.50	40.27	70.48	40.27	15.10	2.01
Czechoslovakia	8.67	9.29	6.81	0.92	185.84	37.16	54.20	9.91	52.34
Yugoslavia	2.52	2.52	1.51	1.20	5.05	60.67	151.69	20.22	20.22
Average Price (London)	(1) 24.71	27.69	24.48	22.51	123.66	(2) 108.89	424.73	(3) 19.35	28.94

(*) Calculated from "Die wichtigsten landwirtschaftlichen Zölle des Anslaudes".

(1) Budapest — (2) Chicago — (3) per 100.

(To be continued)

A. EMANUEL.

THE REORGANISATION OF DAIRIES IN LATVIA

Development of co-operative dairies in Latvia. Mechanisation. Influence of the world crisis. Measures of State aid. Encouragement given to amalgamation of dairies. Measures directed towards increasing supplies of milk to dairies. Scheme for compulsory delivery. Regulation of the market and of exports. Restriction of the establishment of new dairies. Measures directed towards increasing milk consumption. Conclusions.

The striking development of the Latvian dairies since the war has been inaugurated from within, and the co-operative character is noticeable, a small percentage only being private dairies. From the single dairy which was in existence in 1909 when the territory of present day Latvia was still part of Russia, the number rose to some 84 co-operative dairies in 1922, to 319 in 1923; a maximum of 466 was reached in 1927 to fall later between 1928 and 1933 to the still imposing figure of 340, out of which 72.1 per cent. were worked by steam. The development of the dairies is in fact the index of the radical transformation of the economy of Latvian territory, which under Russian domination was largely

industrial, but with the coming of political independence has become almost exclusively agricultural. Some 80,000 new farm undertakings which have come into existence since the constitution of Latvia as an independent State are proof of the extent of the economic change which has come about. It should be noted that the largest development of the milk industry took place between 1922 and 1924, that is, during the years when there was a rapid reduction in the price of cereals, while prices of live stock products rose rapidly as may be seen from the following table:

TABLE I. — *Index of annual average retail prices of agricultural products at Riga.*

	1921	1923	1924	1925
Butter	100	128	139	143
Beef	100	135	161	187
Rye	100	56	67	82
Wheat	100	58	63	74

During the same years the number of co-operative dairies increased as follows:

1921	21	1924	367
1923	319	1925	422

With the growth in numbers there was also an increase in their mechanisation. The hand-worked dairies of the small family farms were replaced by well organised co-operative societies formed by the same small farmers in view of the necessity of procuring the machines required by the development of the dairy industry, the cost of which could be met only by groups of producers. Thus there appeared the first co-operative societies, which however obtained no assistance from the State, as in the early days of political liberty all resources had to be devoted to its own reorganisation. Owing to this absence of State aid mechanisation of the new co-operative undertakings proceeded more slowly than had been the case with the increase in their numbers and quantitative output. Even in 1924 the hand-worked dairies constituted still 79 per cent. of all co-operative dairies. In this year there were in all 367 co-operative dairies collecting 94,900,000 kg. of milk. Difficulties however were many. Although the small dairies for the most part worked only during the summer months, the quantities of milk collected were so insignificant that the opening of a larger dairy was not at all remunerative. Competition between the dairies was keen and resulted in serious difficulties for the whole of the dairy industry. These could be met only by the concentration of butter production. The small co-operative dairies were transformed into milk collecting and separating stations from which the cream was sent to the steam-worked dairies. In this way many dairies maintained existence, but in general these changes resulted in the liquidation of a considerable number of co-operative dairies. It should be added that the butter outturn was not at that period of sufficiently good quality to compete with other producing countries. It is for this reason that steps were then taken to modernise the dairies.

This modernisation took place mainly between 1924 and 1928. During that period the percentage of the co-operative dairies changing over from hand to

steam working rose from 19 per cent. in 1924 to 46 in 1928. Naturally the mechanisation made it essential to have larger quantities of milk for transformation and these were obtained by sending to the large steam dairy the whole production of a number, varying from two or three to ten, of collecting and separating stations. Before long the characteristics of these co-operative societies to some extent altered. In view of the high cost of the installation of the machinery made necessary by the change over from the simple family undertaking to a large mechanised undertaking, a demand began to be made on individual producers desiring to join the society for a contribution which was fairly high and in certain cases extremely so. The result was that only the more well to do among the individual producers could take part in the new enterprises and a somewhat large number of private enterprises and the smaller ones finally closed down. The richer enterprises in consequence assumed the character of share companies and, for speculative reasons, enlarged their sphere of action and perfected their technical equipment. The accompanying table shows the character of the Latvian dairies tracing their development from 1923 to 1933.

Types of Co-operative Dairies in Latvia.

Year	Total number	Percentage worked by	
		hand %	steam or electric power %
1923	319	76.2	21.6
1929	464	27.7	48.2
1931	393	4.6	69.2
1932	362	3.3	72.4
1933	340	3.2	75.9

These figures show that in Latvia there are now scarcely any hand-worked dairies and that the number of dairies worked by motor power is also on the decrease, while that of steam-worked dairies has increased progressively. The explanation lies in the fact that Latvian producers have to compete with the butter production of Great Britain and of Germany under conditions of inferiority in certain respects, as, for example, in means of transport and internal communications. In some regions means of communication are little developed or of a kind to make transport from the isolated farm to the milk collecting station far from remunerative. Milk produced on such farms is consumed on the spot or transformed for local uses.

Dairy production in Latvia has felt the effects of the world crisis and these together with causes of a local character have rendered the export market difficult. It may be said that from 1930 onwards the more prosperous dairy farms have also felt the effects of the crisis. The fall in butter prices on the foreign market has contributed to the increase of milk and dairy products consumption in Latvia and on the other hand has resulted in a diminution of output of dairy products and in their export. In 1933 serious difficulties confronted the dairying industry and the situation did not improve in 1934. An active campaign with the object of overcoming these difficulties has been initiated. Before however discussing in

general the measures taken to assist the dairy industry, mention should be made of the existence in Latvia of a certain number of private dairies which although not of great importance for the general economy of the country have the advantage of appearing better able to hold their own on the home market than do the large co-operative undertakings. Scientific organisation has not been carried so far in these private dairies as in the co-operative dairies. In 1932 the percentage of private dairies worked by hand was still 21.4, while the percentages representing dairies worked by steam, by electricity and by motor power were respectively 23.8, 31.6 and 23.8. In 1931 the maximum of the quantities of milk collected in the private dairies was 41,600,000 kg. and in 1932, 33,500,000 kg. Butter from the private dairies enters into the export trade to a very limited extent. In 1934 twelve private dairies sent butter to be passed for export to the extent of 1.87 per cent. of the total quantity exported.

STATE ASSISTANCE GIVEN TO THE DAIRY INDUSTRY.

The importance of the milk industry in the economic life of Latvia has induced the Latvian Government to accord it all possible financial assistance as soon as it was realised that its prosperity might be irretrievably affected by the results of the crisis. The State Land and Mortgage Bank was made the intermediary for the grant of considerable loans to the co-operative dairies, which in their turn made advances to the farmers in the form of machines, purchases of feeding stuffs, fertilisers, etc. The most recent figures available show that the Bank disbursed in favour of the dairy industry the sum of 10,000,000 lats in the course of a single year. This assistance from the State has enabled the dairy enterprises as a whole to hold their own satisfactorily in spite of the difficulties arising out of the crisis. On the other hand this State aid would seem to be justified when it is remembered that it is mainly from its export trade in butter that Latvia obtains the foreign currency which she needs for payments abroad.

The natural result of the fall of butter prices was that the position of the dairies which had abused credit facilities was past saving. An increase in production could not be counted upon, since the private dairies, worked sometimes by a single family, paid for the milk delivered to them at a higher rate than did the large co-operative dairies. The former were carrying on work without incurring debts, while the latter had contracted numerous debts while prices were high. The small dairies increased in number and continued to exercise an unfavourable influence on the situation of the large dairies. It could already be foreseen that at no far distant time these large dairies would obtain no further milk supplies and that nothing could then save them from bankruptcy and the State would then lose all the money it had invested. It was for this reason that the Government recognised the necessity of regulating as soon as possible the question of the future of the dairies. Three methods were open to it:

- (1) to amalgamate the dairies;
- (2) to find means to oblige the farmers who had abandoned the dairies to resume their supplies of milk;
- (3) to discourage the foundation of new dairies.

(a) *The amalgamation of dairies in Latvia.*

The amalgamation of the dairies had been arranged on the basis of the law of 20 March 1934 for the transformation of certain State loans of an agricultural nature. Paragraph 14 of this law provides for the amortisation of loans granted up to 1 January 1932 for the installation of co-operative dairies, if such dairies either become amalgamated or cease operations. Paragraph 15 of this same law provides that this amortisation must take place if the loan has been contracted in the name of some individual, but is used for the installation of one or several dairies. In consequence, the Land and Mortgage Bank of the State has drafted a scheme according to which 80 dairies will have to cease working and become transformed into collecting and cream separating stations or even to become amalgamated with other dairies. The extinction of the loans will reduce the sum due by 2,000,000 lats, that is to say, the total will fall from 7,000,000 to 5,000,000 lats. The total number of dairies, which a few years before was still more than 400, was now below 300. Only the dairies however, which amalgamate, will enjoy the privilege of the extinction of debts. The remaining dairies which do not submit to the orders of the Bank will not have this right. The amalgamation is attended by some difficulties, as it often happens that a dairy with considerable debts is joined to another which has no debts.

(b) *Consignment of pigs on cards*

Among the means employed for inducing milk suppliers who have abandoned the dairies to return to them, the orders on the purchase of bacon pigs should be mentioned. In accordance with these the share company "Bekona Eksports" buys pigs for the account of the Ministry of Agriculture, from 1 August 1935 to 1 February 1936, paying per kg. of live weight:—

(1)	per kg. of bacon pig of	Ist quality	. . . . .	0.65 lat
(2)	"	"	IIInd "	. . . . . 0.60 "
(3)	"	"	IIIrd "	. . . . . 0.55 "

The payment per kg. of live weight of fat pig, having a thickness of fat in the middle of the back of 7 cm. and more, is 0.55 lat if the live weight is from 150 to 160 kg., 0.50 lat if the weight is from 161 to 200 kg. and 0.45 lat if it is 201 kg. and more. These prices are paid only to pig breeders who can present cards or tickets of the "Bekona Eksports Company" at the time of delivery.

The number of pig purchases is divided among the different districts according to the number of pigs bought in the preceding years and according to the quantities of pigs consigned for export. The number of pigs assigned to each district is distributed among the co-operative dairies and the administrations of the rural communes which also receive cards for distribution to pig breeders. The managers of the dairy companies distribute the cards to their suppliers according to the quantities of milk delivered in the course of the year or of the last month. The rural communes distribute cards to pig breeders who

do not supply milk to the co-operative dairies, only if the reason for not supplying is their distance from the dairy or some equally good reason. According to the purchase scheme of the "Bekona Eksports" Company provision is made for purchasing exclusively from breeders who supply milk to the dairies a total of 72,000 pigs, while from all other breeders only 10,000 pigs will be bought, and only from those farmers whose material circumstances are especially difficult. In this way, as explained in the "Zemkopis," it is the intention of the Government to offer, by means of this transaction, material satisfaction to the dairy farmers who deliver their milk to the dairies for conversion into butter for export, and who in consequence, receive a lower price for their milk than those who sell their own dairy products on the home market.

As regards the practical value of the whole transaction, it has to be considered that there are in Latvia 340 dairies, which means that the suppliers of each one of these can sell a corresponding proportion of the 72,000 pigs in question. But this works out at 212 pigs per dairy per year, or 17.6 per month, or 4.1 per week. Hence it follows that a milk collecting station may, according to the cards received, sell one pig only per week. It must be admitted that this transaction is not calculated to result in any considerable increase in milk deliveries or to bring back suppliers to dairies which have lost them. According to the figures given by the "Lauksaimniecības Tirgus Zinas" (News of the Agricultural Market), the "Bekona Eksports" Company, which had at first paid higher prices, found itself compelled by the fall in the prices of pig meat, to pay 65 Latvian centimes per kg. of live weight on cards and 50 without cards. Since bacon pigs must have a weight of 80 to 94 kg., or an average of 88 kg., it is possible to sell a bacon pig at 44 lats without cards and at 57 lats 20 on cards. The difference of 13 lats 20 is too small, in view of the very small number sold by each milk supplier, for this regulation of the purchasing of pigs to have any lasting effect in diminishing the difficulties with which the co-operative dairies have to contend.

The system of cards for the purchase of pigs has given rise to many misunderstandings at the dairies and the cards have even become the object of speculation. On the other hand, the card itself did not guarantee to the farmer holding it the sale of his bacon pigs. Practical experience has shown that the pig collecting stations have fairly often refused to buy pigs from the holders of cards, while accepting at the same time the pigs of other breeders, although at lower prices. The last enactment of the Ministry of Agriculture has, up to a certain point, reformed some abuses of this system, but it may still be asked if the advantages outweigh the disadvantages.

(c) Proposal for compulsory delivery of milk to the co-operative dairies.

In view of the fact that 58,260 farms only, 21.9 per cent. of the total number, consign milk to the co-operative dairies, the Government had been led to prepare a legislative proposal for compelling farmers to do so. The "Zemkopis," in its issue No. 12 of 1935 says: "The Government cannot regard unmoved the losses occasioned by the practice of farmers who work their milk

on the farm, in accordance with traditional custom, and do not send it to the co-operative dairies. The responsible heads of the economic life of Latvia cannot but admit that in so doing these farmers tend to upset the home market of dairy products to the injury of organised farmers and even of the State. In giving effect to this new law on the assistance to be offered to the dairy farms, it is the intention of the Government to regulate from 1 July the home market of dairy products, in the sense that all stock farmers, even those unorganised, will have to submit to this law and to deliver their milk to the nearest collecting and separating station in order to ensure a uniform method of placing on the market all that is produced. It is probable that in the first instance there will be malcontents, but this is the only possible method for achieving systematic farming and thereby increasing the return obtained by the farmers. The stock farmers are to form themselves into herd testing associations and into dairying societies."

(d) *Previous measures for organising the home market of dairy products.*

The following table shows the payments made by the State to producers of export butter:

	Price guaranteed per kg. of first quality butter for export	Payments per kg. in cash	Cash payments total amount	Payments for amortisation of debts	Total
		(in lats)		(in million lats)	
From 1 July 1932 to 30 June 1933	2.50	—	17.5	2.5	20
From 1 July 1933 to 30 June 1934	2.25	0.80	11.5	4.5	16
From 1 July 1934 to 30 June 1935	2.25	0.80	13.0	8.0	21
			42.0	15.0	57

In 1932 the State paid to the producers out of its own funds 60 per cent. of the price received abroad for exported butter, but in 1934 this percentage had become 145. Taken as percentage of the guaranteed price of the butter intended for export, these payments made by the State constituted 35 per cent. in 1932 and 60 per cent. in 1934.

Taking as basis the law on the regulation of the dairy products market, the Government on 12 September 1935 issued instructions for the regulation of the home market, some paragraphs of which may be quoted here:—

§ 1. — The share company "Latvijas centrālais sviesta eksports" (Central Export of Latvian Butter) is instructed by the Ministry of Agriculture to buy up, from such organisations for handling the products of dairies and cheese making depots as have been formed with the approval of the Ministry of Agriculture, all their butter and the part of their cheese intended for export, with the exception of that part of the products which is given back to the milk suppliers and to the dairy workers for the requirements of their own households, and of a part set aside by the Ministry of Agriculture to be sold within the radius of the activity of each dairy so as to satisfy the requirements of the local market.

§ 6. — Of the butter purchased, the Company "Latvijas centrālais sviesta eksports" places quantities I-a, I-b and II-a on the foreign markets, and returns

butter of qualities I-c, II-b and III to the organisations handling dairy products.

§ 7. — The Company "Latvijas centrālais sviesta eksports" buys for export purposes from the organisations handling dairy products cheeses of the following qualities: Emmental (Swiss), Roquefort, Edam, Zemgeles.

§ 9. — If the Company "Latvijas centrālais sviesta eksports" desires to export cream, milk or other dairy products (other than butter and the cheeses mentioned in § 7) application should be made to the Ministry of Agriculture and its consent obtained.

The instructions from which these paragraphs have just been quoted are of great importance for the future development of the dairy products market in Latvia. In the first place the whole of the trade in butter is seen to be concentrated in a single organisation, that of the "Latvijas centrālais sviesta eksports." Since the right to supply dairy products to this body is accorded only to enterprises approved by the Ministry of Agriculture, it is clear that these enterprises which come under the direction of the Ministry and have conformed to the ordinances of the Ministry in respect of the amalgamation of dairies etc., are up to a certain point, privileged. The price of butter has been fixed much lower than in the preceding years, but as foreign prices were also decidedly lower than formerly, the home prices are still considerably higher than those obtained abroad. The official Journal stated on 13 September 1935 that the Committee on Butter Prices at the Ministry of Agriculture had, on 12 September, fixed the average prices of butter for the month of August 1935 at 1.09 lat for first quality butter and at 0.99 for butter of second quality.

The prices of this cheap butter are lower than the prices of the best qualities of country butter, or in other words the co-operative dairies are in a position to compete with the non-organised milk producers, thanks to the standardisation of their products and to their superior organisation.

The new measures taken by the Government to regulate the home market may have two positive effects: 1. considerable sums will be saved on the butter payments, and 2. the absorption capacity of the home market for the butter of the co-operative dairies will undoubtedly be increased. The price of butter on the home market being higher than the export price, there can be no doubt that these measures will exercise a favourable influence on the development of the dairy societies.

(e) Restriction of the formation of dairies in Latvia.

The Ordinances of 28 January 1935 on the opening of dairies, creameries and cheesemaking depots forbid the opening of new dairies. Dairy societies, organisations or private persons proposing to open dairies or other establishments for transformation of milk, or creameries, are expected, before equipping these, to apply for a preliminary permit to the Ministry of Agriculture.

The establishments for transformation of milk mentioned in the first paragraph which have received the preliminary permit, shall not begin working till after inspection by the representative of the inspection of dairy products. If

the plant has been recognised as suitable for the production of products of high quality, the Ministry of Agriculture will give the required permit. Transfer of these permits to third parties is forbidden.

Private dairies must attach to their application a certificate from the local authorities of their district declaring that these have no objection to raise against the opening of an undertaking for transformation of milk in the locality in question.

In virtue of these ordinances it is quite impossible to equip establishments for transformation of milk without the consent of the Ministry of Agriculture. The establishment of private dairies further presents special difficulties as requiring the consent of the local authorities.

It has thus become impossible for competition to be set up against the existing establishments for transformation of milk. These ordinance are thus directed against the small dairies which work for the home market with a primitive equipment and a staff engaged at low rates, often consisting only of some members of the family of the operator. These dairies for all these reasons can afford to pay higher prices for milk than those paid by the heavily indebted large dairies. The small dairies the competition of which is so prejudicial to the co-operative dairies have been obliged to close in consequence of these ordinances and of those on dairies dated 24 January 1935.

In paragraph 1 of these latter it is stated " the Inspection of dairy products receives for purposes of valuation, and passes for export, butter produced in dairies the opening of which has been approved by the Ministry of Agriculture. "

According to paragraph 5 only persons who have obtained in Latvia, either from the State dairying schools or from the courses for heads of dairies, arranged up to 1 January 1928 with the permission of the Ministry of Agriculture, the right to be master butter makers or heads of dairies, can attain that position.

By paragraph 10 the representatives of the Ministry of Agriculture are empowered to visit from time to time the dairies, creameries and cheese making depots and to inspect their premises, equipment and work. In accordance with paragraph 11 the Minister of Agriculture has the right to deprive persons who infringe these ordinances of the licence authorising them to produce dairy products.

It is clear that the small dairies which employ labour of no very high quality will be forced by these ordinances to close down. The conditions laid down in the remaining paragraphs are such as can scarcely be put into practice except by the large steam dairies. A decrease in the number and in the importance of the private dairies is thus to be expected. The future belongs to the dairies of the large dairying societies who will transform the cream received from the collecting and separating stations.

(f) Measures taken by the Government for increasing the use of milk in the bakeries.

At the time of his visit to the establishments of the consumers' co-operative societies, the Head of the Government also visited the Riga co-operative bakery and there pronounced these words: " After the new year milk will be added to white bread and this bread sold at the same price as heretofore. " (" Kopdar-

biba" No. 14, 1935). It was then the intention of the Government to publish ordinances for the addition of milk to white bread, an intention which has given rise to discussions. The Government however kept to its intention, and on 11 September the co-operative bakery mentioned above began to make white bread with milk and sent samples to the Head of the Government and to the Minister of Agriculture. If all the white bread is made with milk, the consumption of milk will undoubtedly be much larger than it is at present. Consumers' co-operative societies already sell white bread made with milk which they obtain in the required quantity from the Central Union of Latvian Dairies.

CONCLUSION.

The establishment of the authoritative Government in the month of May 1934 was the signal for the beginning of a new epoch in the development of Latvian dairies. In accordance with the economic principles of the Government and in particular that of assisting only such branches of industry as were really likely to hold their own, it became necessary to effect a complete reorganisation of Latvian dairies. This reorganisation has already begun: the Latvian dairying societies are moving along different paths towards the same goal, that of establishing large dairies likely to hold their own and with a modern equipment. With this object the number of collecting and separating stations has been increased and the number of dairies reduced. By so doing the concentration has been successfully effected of larger quantities of separated milk in modern dairies where the technical equipment guarantees the production of dairy products able to meet the competition of the other producing countries which supply the world market.

The subsequent Government measures having as object to bring the dairy industry under Government inspection and direction will have to guarantee the improvement of the qualities of dairy products. Such improvement is essential not only from the standpoint of exportation but also if the dairies are to enter into competition on the home market successfully with the farm production. Serious difficulties are encountered in the execution of these far reaching reforms from the fact that there are not the necessary funds in the State budget. It is mainly for this reason that reorganisation advances so slowly.

The success at first obtained in selling larger quantities of butter manufactured by the co-operative dairies was due to the concentration of all the butter produced in the dairies in a single centre, and to the reduction on the home market of the price of the butter from the dairies which took place in September 1935. From these measures an improvement in the material conditions of the dairies was to be hoped. However at the end of the same month of September butter prices rose on the world market. According to the data supplied by the "International Review of Agriculture (Monthly Crop Report and Agricultural Statistics)," the price of Danish butter in London rose from 109s. on 23 August 1935 to 129s. on 20 September and to 136s on 18 October, and the prices of Dutch butter rose in the same time from 85s. to 106s 6d. and to 123 s. This situation was favourable to the export of Latvian butter and in fact the Minister of Agriculture declared on 16 November that Latvia exported this year 25,727 tons of butter more

than during the same period of the previous year, the average price being 23 per cent. higher. On the other hand the same situation brought about a rise in butter prices on the home market. Farm butter, for example, is sold in Riga at a higher price than that obtained by the producers of butter for export. According to press information, the largest organisation of the butter trade, the Central Union of Latvian Dairies, gave orders for the sale on the home market of large quantities of butter intended for export, with the object of inducing the farmers to supply their milk to the dairies and of competing with farm production of butter.

The rise in the price of butter abroad compelled the Government in its turn to raise butter prices to 2 lats. Such are the difficulties that prevent the dairies from securing the home market at the expense of the farm butter production. This cannot however for long arrest the process already begun of the amalgamation and modernisation of the dairies.

Voldemārs KUNKIS.

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MENZIES-KITCHIN A. W.: Land Settlement: A Report prepared for the Carnegie United Kingdom Trustees. Edinburgh, T. and A. Constable, Ltd., 1935, pp. 175.

Mr Herbert and Mr. Lloyd George in his foreword to Mr. Herbert's volume, are of the opinion that, granted the observance of some essential principles, a policy of land settlement can relieve unemployment in England to a very considerable extent. Reviewing agricultural unemployment in various countries of the world, writes Mr. Herbert, it is clear that the smaller types of farms not only result in greater employment per acre, but also create owners and occupiers of farms rather than hired workers. The author suggests mixed holdings as best suited to conditions in England, the establishment of group settlements to provide economical co-operative production in dairies, pig raising and bacon factories, the organisation of group settlements to support live stock and poultry activities, the establishment of canning factories, marketing depots and co-operative transport facilities for each settlement.

Mr. Lloyd George concurring fully in Mr. Herbert's conclusions, writes textually: "We can no longer afford to neglect our soil: to relegate our sons to the smoke of city slums... It is a crime which after-generations will find almost incredible, that we should have millions of able-bodied men in unwilling idleness while our land cries out to be tilled. Mr. Herbert shows that a big measure of land settlement would be economically and financially possible. With that conclusion I am in warmest agreement."

A diametrically opposite view of the problem is taken by Mr. Menzies-Kitchin.

In this opinion the economic tendency towards diminishing agricultural employment is opposed to the politico-humanitarian movement aiming at increasing it. Economic factors, in his opinion, will win out against other motives. With a long series of arguments and a great wealth of statistical data, Mr. Menzies-Kitchin upholds his contention and reaches the conclusion that the opportunity for additional settlement in Great Britain, either from the wider issues of economic policy or from the more specific consideration of the small holding as a unit of agricultural production, is largely illusory.

V. F.

DE SIMONE, Prof. Vittorino: *Attuali condizioni dell'industria zootecnica italiana e direttive per il suo incremento. Estratto dai Nuovi Annali dell'Agricoltura*, editi dal Ministero dell'Agricoltura e delle Foreste. Rome, 1935.

During these last few years, the conditions of the live stock industry, as is well known, have become difficult in a number of countries. Following on a period of high prices, of sustained reconstitution of herds and of increase in the consumption of meat (1925-26), there began in 1929 the period of crisis, characterised by a marked price decline and by a slowing down of the rate of increase in live stock production. The position of Italy in this respect, which receives thorough investigation in all its aspects in the work of Prof. De Simone, is essentially affected by a want of equilibrium between costs of production and sale prices of milk and meat, with this peculiarity that a superabundance of milk is found in relation to the national requirements and to the possibilities of export of dairy products, while there is a deficiency in meat and fats. It is calculated that the requirements of Italy are approximately 7,600,000 quintals of meat, 2,100,000 quintals of fats, and 2,700,000 quintals of eggs. Hence, taking into account the production within the country, the annual import requirements amount to 750,000 to 800,000 quintals of meat under different forms, 100,000 quintals of fats (including butter) and of 50,000 quintals of eggs. In view of the re-establishment of the equilibrium in the situation, and, especially, of the improvement of live stock farming alike on the technical and the economic side, the following measures are advocated by the writer: appropriate tariff protection, the effect of which would be to regulate the influx of imported live stock products in such a way as not to disturb the home market; the encouragement of a larger consumption of beef with a better adjustment of retail to wholesale prices and also bringing the dues and charges in respect of poultry, in the more important centres, into closer correspondence with those already in force in respect of beef and veal; encouragement of live stock development, placing stock farming on new economic bases, by reduction in costs of production and by improvement alike in the quality and numbers of animals; finally, the institution of a strong economic organisation among farmers and farm workers, with the object of securing proper returns on slaughter cattle, in such a way as to reduce to a minimum the margin at present existing between the prices paid to the breeders and the market prices, and further to stimulate the revival of the live stock trade.

ENTE AUTONOMO PER LE FIERE DI VERONA. Atti del Convegno per il miglioramento della vecchia casa rurale, 10-11 marzo 1935. Verona, 1935.

In this meeting a discussion took place of the problem of the rural dwelling especially in respect of the better utilisation and improvement of existing buildings in Italy. The official reports submitted deal with the subject respectively under the economic, static, hygienic and financial aspects.

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(1) Previous list December 1935. To be continued June 1936.

(2) List of abbreviations: bihebdom. (biweekly); bimens. (twice monthly); bimestr. (every two months); déc. (every ten days); étr. (foreign price); f. (copy); hebdom. (weekly); int. (home price); irr. (irregular); mens. (monthly); n° (number); N. S. (new series); p. a. (per annum); q. (daily); sem. (half yearly); s. (series); trihebdom. (every three weeks); v. (volume); trim. (quarterly).

(3) Between brackets [/] are given translations and explanatory notes not appearing in the title of the review.

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AGRICULTURAL PROTECTIONISM AND THE AGRICULTURAL SITUATION 1925-1929

PART II. — DEVELOPMENTS IN WORLD AGRICULTURE IN THE YEARS PRECEDING THE DEPRESSION.

CONTENTS: I. *Basic changes in agricultural production and in the consumption of agricultural products.* Maladjustment between the trends of agricultural production and demand in different areas. — II. *General economic situation as affecting agriculture.* Capital movements: changes in structure and distribution of international lending as factors contributing to the development of maladjustments. Stabilisation and its effects. — III. *Price movements:* general prices; relations between agricultural and industrial prices. Development of the agricultural price situation in various countries. — IV. *International trade in agricultural products in 1925-29.* The evolution of trade in cereals, meats and butter. — V. *Conclusion.*

I. — BASIC CHANGES IN AGRICULTURAL PRODUCTION AND IN THE CONSUMPTION OF AGRICULTURAL PRODUCTS.

If protectionism was the outstanding factor governing and changing the volume and course of international trade in agricultural products after the outbreak of the present economic depression, in the preceding period it was only one of the many factors which were working together to produce the situation which followed.

The maladjustments which led to the depression were due to a combination of causes which tended to upset the balance between supply and demand on the world market of agricultural products.

The result of the war had been to give a severe set-back to European agriculture, and an impetus to overseas agriculture increasing the dependence of Europe on the "new" countries. As a consequence of this, one could observe a relative increase in intercontinental as compared with intra-continental trade. Important changes also took place in the technical methods of production and transportation, tending to accentuate the advantage of the non-European countries.

The changes in technical methods as regards production consisted in both improved mechanical appliances for ploughing, sowing and harvesting and in the improvement of qualities, increasing the resistance to adverse natural conditions, and therefore making possible the extension of cultivation to areas which formerly were regarded as unsuited. Further, these changes, which often required large investments of capital, and which were labour saving in character,

were especially adapted to conditions of large scale extensive farming, where the yield per acre was relatively less important. In other words, technical progress on the production side was most relevant to the plains of Canada, U. S. A. Australia and to the capitalistic farmer than to the subsistence farmers of Europe. In Canada and U. S. A. for example, the area under wheat during the period 1925 to 1929 as compared with the pre-war years 1909-1913 has increased from an annual average of 4.0 and 19.1 million hectares respectively to 9.3 and 23.6 million hectares, whilst the yield per hectare went down from 13.3 and 9.9 quintals to 12.3 and 9.5 quintals respectively.

The assistance given to these extensive farming countries by transport changes was significant both in the case of grain transportation and of that of animal products, the former principally by low shipping rates and the latter by the improvement in refrigeration and other methods of preservation. The latter developments particularly affected Australia and New Zealand.

The effect of such technical progress is not necessarily uniform, not only as between different countries producing the same crop, but as between different crops. Inventions which are of equal applicability to a number of products will tend to be used to a greater extent on the crop which fetches a higher price. This implied not only an absolute increase in the production of wheat but a relatively much greater increase than in the case of other cereals. And the greater the application of such methods, and the greater the resultant production of wheat, the less tended to become the difference in profitability between wheat and the other cereals. Indeed, whereas in 1925 wheat prices had risen much more than other cereal prices as compared with pre-war years, from that year onwards the price margins tended to shrink. The same factor is in part the explanation of the far greater increase in world production of wheat, than of any of the other major cereals. The figures in the following table indicate this phenomenon.

TABLE I. — *World Production of Cereals 1909-13 and 1925-29.*

	Average 1909-1913 million quintals	Average 1925-1929 million quintals	Percentage increase
Wheat	1,028	1,212	17
Rye	450	460	2
Barley	380	390	3
Oats	656	670	2
Maize	1,045	1,145	10

The changes in the intercontinental distribution of cereal production are shown in the table below.

In Europe, the average production during 1925 to 1929 was only either a little larger or a little less than in the pre-war years. An important feature of the cereals market, as shewn in the table, was the decline in the production of barley in Russia, which gave an impetus to the production of barley elsewhere and of maize and the growth in Russia of all the other cereals. It may be noted

TABLE II. — *Distribution of Production of Cereals:*
 (a) 1909-13 and (b) 1925-29.
 (million quintals).

		Wheat	Rye	Oats	Barley	Maize
Europe (excl. Russia)	(a)	370.5	250.9	282.3	154.3	151.2
	(b)	367.8	222.4	207.9	155.7	145.6
Russia	(a)	206.0	189.1	134.3	90.5	13.4
	(b)	215.2	220.5	143.4	57.6	34.7
N. America	(a)	244.7	9.7	220.2	51.6	731.6
	(b)	344.1	13.7	237.0	70.2	705.0
S. America	(a)	49.1	0.2	8.6	2.5	92.0
	(b)	79.7	1.8	11.1	5.7	131.2
South Africa	(a)	1.7	—	—	—	7.5
	(b)	2.2	—	—	—	10.2
Australia	(a)	24.6	—	—	—	—
	(b)	37.0	—	—	—	—
World (excl. Russia).	(a)	822.6	261.3	521.2	289.0	1,032.9
	(b)	997.1	239.8	526.1	332.5	1,110.3
Total World	(a)	1,029.0	450.4	655.5	379.5	1,045.3
	(b)	1,212.0	460.3	669.5	390.1	1,145.0

that production of barley in N. America increased. But the chief changes were the large increase in wheat production in N. and S. America and Australia. In S. America, the large increases in the production of both wheat and maize were due primarily to the Argentine, where the production of the former rose from 40 to 66 million quintals and the latter from 48.7 to 75.5 million quintals. In N. America the production of wheat grew at a much greater rate in Canada than in U. S. A. Production in the former increased from 54 to 117 million quintals, whilst production in U. S. A. increased from 188 to 224 million quintals.

Changes of Production in Europe.

Apart from the war and its consequences the development of agricultural production in Europe was influenced by certain other factors, such as reform in land tenure, splitting up of large estates and general social reorganisation. In wheat, Europe as a whole reached the pre-war level of production only in 1925 and 1928 as a result of exceptional harvests, the areas under cultivation still being less than in pre-war years and other years of the period. On the other hand the production of rye and oats never reached the pre-war level, whilst the production of maize was considerably higher in 1925 and 1926—159 and 166 million quintals respectively—than before the war. Again, the production of barley, which had been substantially lower than pre-war production until 1928, increased in that year and in 1929 to 161 and 180 million quintals respectively. The variability of the causes affecting the situation can be seen firstly from the production of the cereals in the European importing countries, and secondly in the European exporting countries.

TABLE III. — *Production in certain European Importing Countries:*
(a) 1909-13 and (b) 1925-29.
(million quintals).

	United Kingdom		France		Germany		Italy		Belgium	
	a	b	a	b	a	b	a	b	a	b
Wheat	15.9	14.1	88.6	79.3	37.7	32.6	49.9	62.4	4.1	4.0
Rye	—	—	13.3	9.0	95.9	76.0	1.4	1.7	5.8	5.5
Barley	12.6	10.9	11.5	11.0	28.7	28.7	2.2	2.5	1.0	0.9
Oats	23.6	24.6	53.5	50.8	76.8	76.8	5.4	6.3	6.2	6.9
Maize	—	—	5.7	4.5	—	—	25.5	24.4	—	—

Thus firstly the position of Italy is remarkable, in that, with the exception of maize, production of all the cereals increased. Much of this increase is to be attributed to the special governmental activity centring around the "wheat campaign." Again, in France, production of all the cereals diminished, whereas in Britain production of oats increased, and in Germany production of barley reached its pre-war level. The tendency towards the substitution of rye by wheat is borne out however in the four continental countries, where rye either diminished much more than wheat or increased much less. The production changes in the principal European exporting countries may be seen from the next table.

TABLE IV. — *Production in certain European Exporting Countries:*
(a) 1909-13 and (b) 1925-29.
(million quintals).

	Poland		Rumania		Hungary	
	a	b	a	b	a	b
Wheat	16.8	16.5	45.7	28.7	20.0	21.6
Rye	57.1	61.9	5.2	2.8	8.0	7.6
Barley	14.9	14.0	14.6	16.4	7.1	6.0
Oats	28.1	23.2	15.0	10.2	4.4	3.7
Maize	0.8	0.9	59.1	45.8	15.1	17.9

The most important developments as revealed in the table were the decline in the wheat and maize production of Rumania, the growth of rye production in Poland and the growth of both wheat and maize production in Hungary. It will be seen that only in Rumania had the production of barley increased, whilst in both Poland and Hungary the production of both barley and oats had decreased. In Rumania production of maize fluctuated considerably during 1925 and 1929, and the upward trend was a recovery from the falling off in production before 1925 due in part to the land reform, which had split up the large estates, encouraging farmers to subsistence wheat farming, coinciding therefore

also with a change in the staple diet from maize to wheat. It may be noted that the production of maize in 1928 fell to 27.6 million quintals as compared with 31.4 million quintals of wheat. But in 1929 production again rose to 63.9 million quintals, as compared with 27.1 million quintals of wheat. In 1926 Poland had a net export surplus of wheat. But in 1927 and subsequent years she has again a substantial import surplus which tended to make the production of rye relatively more attractive particularly as German production was still at a considerably lower level than before the war.

In the importing countries, tendencies during the period were again diverse. From 1927 onwards, both France and Italy tended to increase wheat production, but production in the United Kingdom, the predominant free-trade country, decreased. In Germany production fluctuated from 32.8 million quintals in 1927 to 38.5 in 1928, but again fell, to 33.5 million quintals in 1929. A further factor in the recovery in production in the continental European countries, in spite of the increased overseas competition and the declining demand for cereals, was the peculiar structure of farming. Production in Europe was largely, even in the exporting countries, on a small scale and for the farmers' own subsistence and to a lesser degree than in overseas countries, for the market. Again the practice of mixed farming and the necessity for some cereal as a covering crop for clover made cereal growing worth while as the demand for livestock and livestock products grew.

The cereal situation affected and in its turn was affected by the livestock situation. Agricultural livestock increased considerably in the non-European countries and to a certain extent, particularly in the non-European countries, this fact operated as a check in the decline in demand for fodder cereals. Thus in Argentina the number of head of cattle increased between 1913 and 1925 (or the dates nearest these at which censuses were taken) from 25.9 to 37.1 millions, in Australia from 11.5 to 13.2 millions, in Canada from 6.7 to 9.3 millions and in Brazil from 30.7 to 34.3 millions. The poorer qualities of wheat, especially in the overseas countries, were used to a somewhat increased extent as cattle fodder, tending sometimes to depress the fodder market. A counter-acting tendency however to this check to the decline in the demand for cereals was given by the fact that in many regions of Europe the proportion of cattle for dairy purposes was increasing, whilst the methods of feeding were changing also to the disfavour of cereal fodders. Again an important fact for the demand for cereal fodders was the heavy decline in the consumption of cereals by horses, for the numbers of horses employed in transport in the towns and for army service, which consumed more cereals than horses employed in the country, tended to decline as mechanical transport increased.

In Europe, all kinds of livestock had decreased, but herds of both cattle and pigs tended to increase during 1925-29, whilst in the new world, by contrast, cattle tended to give way to sheep and pigs (Table V).

The violent changes that occurred in world production as a result of the war, and the consequent reversal of the movements during 1925-1929, is well illustrated also in the case of sugar. World production of cane sugar had almost doubled, but European production of beet sugar by 1925 had surpassed the pre-war level.

TABLE V. — *Number of Livestock 1925 and 1929.*

(millions)

	1925			1929		
	Cattle	Pigs	Sheep	Cattle	Pigs	Sheep
Germany	17.2	16.2	4.3	18.0	19.9	3.5
France	14.4	5.8	10.6	15.6	6.1	10.5
United Kingdom	8.0	2.9	23.6	7.9	2.7	24.3
Poland	4.7	2.5	0.9	4.5	3.1	0.8
U. R. S. S.	59.6	20.9	107.0	67.2	20.5	132.8
Argentina	37.1	1.4	36.2	32.2	3.8	44.4
Uruguay	8.4	—	14.4	7.1	—	20.6
New-Zealand	3.5	0.5	24.6	3.5	0.6	29.1
Australia	13.3	1.1	103.6	11.2	1.0	104.6
U. S. A.	59.1	52.2	34.7	58.0	53.2	50.5
Canada	9.3	4.4	2.8	8.8	4.4	3.6

World production of cane sugar in 1925-1929 averaged 176.4 million quintals as compared with 95.7 million quintals in pre-war years. Production of beet sugar, on the other hand, averaged 85.7 millions in 1925-1929 as compared with 79.4 million quintals. Beet sugar played a special role in European agriculture and European agricultural policy, and perhaps provides the chief case among the staple agricultural foodstuffs in which European production exists largely by the aid of Government assistance. Sugar was, in relation to its market price, the most highly protected of all the staple agricultural products.

In all areas in which cane sugar was grown, production increased enormously. In North and Central America together the total production between 1925-1929 averaged 63.8 million quintals as compared with 31.4 before the war. In S. America, production increased from 8.1 to 20.1 million quintals, the largest increase occurring in Brazil (from 2.8 to 9.6 million quintals). In Asia, that is, in the Indies, Formosa and Japan, production increased from 43.9 to 71.3 million quintals. Production in Australia more than doubled, rising from 2.0 to 5.1 million quintals.

In Europe, exclusive of the U. S. S. R., the area under sugar beet increased from 1.5 millions of hectares in 1909-13 to 1.9 millions of hectares in 1929, and the production from 398.3 to 441.8 millions of quintals.

Yet, if the production of the staple foodstuffs tended to increase, the capacity of their consumption was limited: a fact which tended to raise the problem whether the ultimate result was to be the production of more of these staples with the same resources in land and labour, or the production of a more or less stable quantity per head with fewer resources, turning the resources thereby left over to the production of different foodstuffs, which once belonged to the "luxuries" class, or to manufactures.

During the period up to 1929 in which some general economic progress was made, the solution seemed to lie midway. There were factors tending to increase the demand for the staple cereals and meats and to absorb also a larger quantity of other foodstuffs.

The circumstances making for an increase in the demand for the staples as their supplies increased was firstly that the great bulk of the world was still relatively undersupplied and that, secondly, as price relations changed and industrial prosperity increased, a tendency to the substitution of the inferior staples by the superior. Thus though the estimated world consumption per head diminished in all the cereals, it diminished least in the case of wheat, whilst in many European countries, particularly the primarily agricultural countries, the consumption of wheat per head increased. Thus according to approximate estimates, the consumption of wheat per head increased in the following countries:—

TABLE VI. — *Increase in Wheat Consumption.*
(kilos per head).

	1909-1913	1925-28
Bulgaria	133	153
Denmark	114	152
Italy	167	189
Netherlands	119	124
Norway	43	73
Roumania	82	123
Sweden	70	93

Again, the consumption of meat which had fallen off as a result of the war in most European countries recovered. Thus in Germany consumption per head of meat which averaged some 49.5 kilos in 1913 had fallen in 1925 to 44.9 kilos and then rose by 1928 to 52.8 kilos. In most countries, too, and particularly in Great Britain, there was growing tendency during 1925-1929 to the substitution of chilled beef for frozen and of lamb and pig meat for beef.

On the other hand the changing standards of living in many countries were involving a reduction in the demand for wheat. Thus in those countries in which the consumption of wheat was before the war very high, important decreases occurred. Comparing 1909-1913 with 1925-1928 the average annual consumption per head of wheat fell in Belgium from 234 to 185 kilos, in France from 223 to 199 kilos. Again, in Germany, in spite of the growing preference for wheat instead of rye, the consumption of wheat fell from 86 kilos to 81 kilos in the same periods. The low figure in both periods is of course due to the fact that rye is the staple bread cereal. The tendency to the falling off in the consumption of bread as the standard of living improves is shewn also by the low level and the decrease in consumption in the wealthiest countries. Thus in U. S. A. wheat consumption per head fell between the same periods from 147 to 126 kilos and in Great Britain from 163 to 154 kilos. And we noticed above factors tending to diminish demand for cereals as fodders.

The competition between foodstuffs can be described as arising from the substitution of rye by wheat, of bread by vegetables and fruits. There seems to have been a tendency—at least in Great Britain—towards the substitution of the lighter meats for beef and of meats in general for dairy and poultry produce. (1)

(1) See FEAVERYEAR: *The National Expenditure*, 1932. *Economic Journal*, March 1934, p. 34.

Again, the average diet began to include more sugar, cocoa, coffee and tea, owing to the great increase in production and the consequent fall in prices of these products after the war. During the depression itself, however, there seems to have been a reversal of these trends. As the standard of living declined, there would appear to have been a return to the simpler and cheaper foods.

II. — THE GENERAL ECONOMIC SITUATION AS AFFECTING AGRICULTURE.

One can see that in the agricultural situation itself there were elements of instability, since the trends of development of supply and demand of the principal agricultural products pointed in different directions.

The general economic situation, which formed the background of agricultural conditions, during the period 1925 to 1929, was largely determined by the monetary conditions and the capital movements of that period.

The capital movements during these years were very extensive, and though they contributed to the expansion of industry and trade, which distinguished this period, they did little to ensure a steady progress of economic activities and the consolidation of the trade currents which they produced. International lending called forth vast movements in international trade; but any reversal or change in the flow of capital was bound to disorganise the channels into which the currents of trade were directed. The position was all the more precarious because the structure and the distribution of international lending were such as in themselves to imply a menace of breakdown.

The total volume of lending grew considerably during the period as compared with the immediately preceding years. The reasons were various, partly political and partly economic. Political conditions appeared to be gaining stability, the major post-war international problems in the shape of reparations and exchange stabilisation appeared to have been settled and industry was undoubtedly on an upward trend.

Before the war, however, the great bulk of international lending was purely "economic" in the sense that it was invested for private profit, of which the chief source was to be the returns of the industries and private firms which borrowed, the chief guarantee being the success of the borrower. In the post-war period a far greater proportion was either lent directly to governments and municipalities, the guarantee being the solvency of the government, or to industries backed by Government guarantee. Because of the growth in 1925-1929 of private borrowing, the proportion of state, municipal and government guaranteed borrowing tended to decline. But a high proportion was still an outstanding feature. Investment therefore bore less relation to possibilities of profit. The importance of this phenomenon can be seen from the fact that in 1928 the new capital issues for foreign account floated in the United States which were government guaranteed or controlled amounted to 759.8 million dollars, as compared with 511.87 million dollars of issues to private corporations. It need hardly be added that such a large amount of government indebtedness, particularly where the loans were not used in such a way as to earn their own return, threatened once more, should any worsening of the economic situation occur, that budgetary and finan-

cial stability which had in most countries only very painfully been acquired, and, by consequence, the internal production structure. The stability of agricultural countries such as Australia and Argentina which had borrowed heavily was thus seriously endangered as soon as agricultural prices began to fall.

The second feature in the structure of international lending which threatened stability was the great volume of short-term lending. Before the war short-term movements of capital were relatively small, arising mainly from the temporary indebtedness of importers before they sold their goods, and the fact that the period of high importation did not normally in most countries coincide with the period of high exportation. It arose in precisely the same way as any short term credit transaction in domestic trade. After the war, however, the insecurity of investment discouraged the lending on long term. At the same time the lack of confidence in certain currencies even after the period of stabilisation led savers to hold currency in the country which at any moment seemed most secure. The direction of lending would therefore shift very quickly. The most stable countries became as a result borrowers as well as lenders on short term and were at the same time lenders on long term. But whereas the short term transactions were primarily with Europe, the long term lending was directed primarily to the non-European primary producers. This again implied that a fall in agricultural prices outside Europe would be bound to have serious repercussions in Europe. We saw above the technical factors in agriculture leading to instability. The insecurity in the whole position can easily be understood.

If the structure of lending itself gave little hope of stability—the distribution of lending during the period equally suggested an unstable course of world trade in agriculture. The principal lenders in the post-war period were U. S. A., the United Kingdom and France. The principal borrowers were Germany and the European and non-European agricultural countries.

The importance that these loans had for the development of agriculture can easily be understood. Though the great part was not directly invested by farmers but were used in industry and the improvement of transport and communications and public works, their indirect aid was immense. A great part of the loans went to the countries producing the staple agricultural commodities which were at the same time exporters to western Europe. Thus the effect of capital movements was in part to intensify the competition among agricultural exporters to Europe and at the same time to assist in the recovery of the European countries. The United States, as a lender and exporter, was particularly affected by this double movement and her export trade tended to decline as a result. Considerable controversy was aroused in the United States by this policy of lending to competitors. For the United States, the period 1925-1929 was a period of industrial expansion. Her loans enabled her to sell abroad primarily industrial goods. There is no doubt that this fact also played its part in determining the so-called "scissors" movement of prices. The prospects of American agriculture, as a result of these various forces, together with European protectionism, seemed discouraging. It is interesting that in 1928 the American Secretary for Agriculture was able to say in his annual report that "Agriculture is losing ground in the foreign market and is moving into a position in which

its chief care will be not to lose ground in the home market. In all probability the time is not far distant when the home market will be the chief preoccupation of our farmers." The accuracy of this prediction was seen as the depression developed.

The dangers in the international capital structure were revealed during 1928 and 1929 as the industrial "boom" in the United States developed into a speculative stock market boom and as loans began to be called in from abroad. At the same time a somewhat similar situation, though less pronounced, was developing in France. One result of the stabilisation of the franc was a growth in confidence which led French investors to recall the funds they had placed abroad. According to the *World Economic Survey* for 1931-32 the French deposits abroad up to 1927 amounted annually to some 500 million dollars, invested principally in London and New York. Thus with the United States and France calling back their short term loans and with all three diminishing their investments abroad the pressure on the balance of payments of the agricultural exporting countries, particularly Australia and the Argentine became so strong that they were obliged eventually to abandon the gold standard.

The above indicates an important effect of the stabilisation of currencies, and how the policy of stabilisation without a coordinated economic policy relating treatment of currency to the general economic situation produced unwanted effects. We saw in our discussion of protectionism a similar disturbing effect of what may be termed the excessive fixation upon the monetary problem.

The effects of currency movements and currency policies on the direction of international trade were equally important and require consideration. In the entire post-war period two questions arose in regard to currencies. Firstly, whether or not they should be stabilised at all, and secondly, if it were agreed that they should be, at what rate. Looking back it seems that it was generally believed that even if general economic conditions and international relations were unstable, currency stabilisation would tend to induce stability. Consequently, there was little disagreement that currency stabilisation should be proceeded with as rapidly as possible. As regards, however, the rates at which currencies were to be stabilised and the policies to be pursued to that end, there was greater controversy and less uniformity of action between different countries.

Though Great Britain was not the first country to return to gold at the pre-war parity, her influence was predominant. The British Dominions and Colonies followed very quickly, together with a number of European countries most of which, incidentally, were among the neutral countries during the war. The return of Germany to the pre-war parity was equivalent to the establishment of a new currency, for all significance of the old had been destroyed by the great inflation. Return to the pre-war parity frequently implied, if it were to be successful, a deflationary internal monetary policy. Similar policies were implied in a number of countries which, though they did not return to the pre-war parities, adopted a value higher than had obtained in the preceding years. Italy and Czechoslovakia may be cited as countries in which the deflationary tendency was very pronounced. The most difficult times for these countries—excepting the slump in 1921—came after the return to the gold standard. In a number

of other cases, the difficulties came before. Thus France returned to the gold standard at a rate which imposed little strain on her monetary system, by having previously "reorganised" it in recovering from the inflation of 1926. Belgium similarly, by choosing an appropriately low rate, avoided the difficulties of Britain and Italy. The Central European agricultural countries and Poland after their inflations also stabilised at comparatively low rates. Broadly it may be said that these monetary policies did not succeed in equilibrating internal and external price levels. The tendency was for the countries which had chosen a high parity not to deflate sufficiently—the obstacles are well known—whilst the countries which had chosen low values did not inflate sufficiently. The effect on trade channels cannot be precisely ascertained, because they were affected also by many other circumstances, some of which have been described, but we may note that it was the large European importers of agricultural commodities, whose currencies tended to be overvalued making them comparatively attractive markets, whilst the European agricultural exporters were assisted by their undervalued currencies in their struggle against their competitors.

It would also appear that the adoption by the countries of the British Empire of the pre-war parity tended to favour their exports to Britain as compared with other countries. This tendency was observable before the Ottawa agreements of 1932. Thus in the period 1924-29 the percentage of exports from the Dominions going to the United Kingdom averaged 45.8 %. In 1931 this percentage had risen to 50.9 % (1).

III. — PRICE MOVEMENTS.

The forces at work which have been described above can, in the light of subsequent events, be seen to have promised a later breakdown in the economic system. Until that happened, economic progress was considerable throughout the world, both in industrial and agricultural countries. Here and there were a few "black spots" such as the high figure of unemployment and the continual agricultural depression in Great Britain, but these seemed to be of a chronic character which did not affect the rest of the system. Standards of living improved, and industrial production, as well as agricultural, increased. The following table taken from the *Statistical Yearbook*, of the League of Nations shews the increase in industrial production in these years. It can be seen that the increase was general and considerable (Table VII).

It should be noticed that as late as 1929 the increase in production continued in all these countries, so that, simply from the production side, there was no indication of the forthcoming collapse. From 1927, however, prices in a number of countries began a downward movement. We may consider first the course of prices in general, secondly the relation of agricultural to industrial prices, and thirdly the prices of the staple agricultural products.

(1) See the study by Sir George SCHUSTER: *Empire Trade before and after Ottawa*. Supplement to *The Economist*, November 3, 1934.

TABLE VII. — *National Indices of Industrial Production.*
(1925 = 100).

	1926	1927	1928	1929
France	116	102	119	130
Germany	95	120	120	122
Poland	98	123	138	138
Sweden.	103	108	104	127
United Kingdom.	77	111	105	113
U. S. S. R.	139	164	198	223
Canada.	117	127	138	154
U. S. A.	104	102	107	114

It may be noted (Table VIII) that the United Kingdom—whose production had increased in 1929 least compared with 1925— was also the only country in which prices fell continually throughout the period. Whereas prices in Italy and France were rising up to 1926, they fell severely at the end of that year and in 1927 as compared with the preceding years. In the former country the fall continued, in the latter prices remained near the 1927 level. It is important to note that the most stable prices were those of U. S. A., Canada, Australia and Germany.

TABLE VIII. — *Indices of Wholesale Prices 1925-29 (1).*
(1913-14 = 100).

	United Kingdom (a)	France	Germany	Italy (b)	Czecho- slovakia	U. S. A. (c)	Canada	Australia
1925	160	561	142	646	997	148	159	162
1926	148	718	134	654	944	143	155	161
1927	141	630	138	527	968	137	150	159
1928	140	634	140	491	969	140	150	157
1929	137	623	137	481	913	138	149	158

(a) Board of Trade. — (b) Milan Chamber of Commerce: — (c) Bulletin of Labour Statistics.

The analysis of the forces at work that we have given above indicates that it was unlikely that agriculture would share equally in the prosperity of the times with industry (except those branches which were more directly dependent on industrial prosperity). The outward sign of this facts in countries in which both industry and agriculture were important, was the so called "scissors" movement of prices, or the increasing divergence of industrial and agricultural prices, to the disadvantage of the farmer, making it less easy for him to purchase industrial commodities, both for his own consumption and for his production. The movement was not indeed severe until the slump came, when it affected also the agricultural raw materials of industry. But it certainly was becoming evident. The reasons for this movement are fairly

evident. In the overseas exporting countries, agricultural prices had naturally benefited from the war and post-war demands of Europe to a greater extent than industrial prices, and the recovery of European agriculture necessarily would tend to check or reverse this movement. And again, though technical progress helped these countries, and though it was as rapid in industry as in agriculture, broadly it may be said that the demand for industrial goods is more elastic, or more capable of expansion without large price falls, than the demand for agricultural goods. In each country, however, special circumstances also operated. In the United States, the classical land of the "scissors" movement, the relation of industrial and agricultural prices after the war tended to turn in favour of the industrialist also because of the industrial tariff, the European agricultural tariffs and the foreign demand for industrial products as a result of her lending. During these years, however, these tendencies were clearly apparent only in grain prices. The following figures indicate the character of the movement.

TABLE IX. — *Agricultural and Industrial Prices in U. S. A. (1).*

(1909-1914 = 100).

	Grain Prices	Products sold by the farmer	Commodities bought by the farmer
1925	156	149	147
1926	129	144	136
1927	128	144	131
1928	130	146	139
1929	121	146	138

Thus grain prices, after falling heavily in 1926 as a result of the bumper harvests of 1925-26, only recovered slightly in 1928 and then fell again in 1929. The index of the prices of commodities bought fell much less in 1926 and 1927 and was substantially higher in 1929 than in 1927. On the other hand it will be seen that, taking all farm products, the position was rather the reverse.

The situation of the European exporters was definitely worse. In Poland for example, taking 1927 as 100, the prices of agricultural products in general fell to 97.2 and 85.7 in 1928 and 1929 whilst industrial prices were higher in these last years at 104.2 and 103.3. The index of fertilisers had risen in 1929 to 126.5, whilst that of cereals and potatoes had fallen to 73.1. In the importing countries however similar tendencies were at work. In Germany the position tended to worsen after 1927, after having improved up to then. In 1927 the general index of agricultural prices stood at 137.8 as compared with the base year 1914, whilst industrial products stood at 137.6. In 1929 the former index had fallen to 130.3 whilst the latter was almost unchanged at 137.2. The fall however in the category "foodstuffs of vegetable origin" which includes cereals, was particularly heavy after 1927, just as the rise up to then had been considerable. The index fluctuated during these years in

(1) Index-Numbers of Prices of Agricultural Products and Other Price-Indices of Interest to the Farmer. International Institute of Agriculture, Rome, 1930.

the following manner: 1925 = 127.1; 1926 = 130.5; 1927 = 153.8; 1928 = 142.2; 1929 = 126.3. In Germany, it may be added, the industrial recovery was itself of great assistance to agriculture, particularly the recovery of the chemical industry. The index of the prices of fertilisers as a consequence fell, and in 1929 stood at 84.4 as compared with 88.3 in 1925.

Thus broadly it may be said that after 1927, when the various consequences of the forces described above were beginning to have their effect, the price ratios between agriculture and industry tended to move against the farmer. Not all branches of agriculture suffered throughout the period, nor to the same degree, as was shewn in the case of the United States, and as can be seen also from the following brief description of particular agricultural prices.

With regard to the cereals market two main facts stood out. Firstly the greater increase in wheat prices than in other cereal prices as compared with before the war, and secondly the greater decline in wheat than in other cereal prices during the period 1925-29. These facts, broadly, obtained both on the free and the protected markets. The following table shows the course of prices of wheat, oats and maize in Great Britain. It will be seen that whereas wheat prices declined throughout the period, the prices of maize and oats, after falling more heavily, recovered in 1927 and 1928, and in 1929 were still much closer to the 1925 price than in the case of wheat. In Germany, a somewhat similar situation is observed in the cases of wheat and rye, as the following figures show. Thus though the price of rye rose considerably in 1927 and then fell heavily down to 1929 the average price in that year was nearer the 1925 level than was the price of wheat whilst in 1927 and 1928 rye prices were much more favorable than wheat. In the cases of barley and oats too the prices in 1925 were relatively low as compared with 1913 the price of the former having risen from 17.78 to 19.53 marks per quintal and the latter from 17.35 to 19.63 marks per quintal, or a rise in the former case of approximately 10 % and in the latter of 12.5 %.

TABLE X. — *Price Indices of Certain Grains in Great Britain.*

(1913 = 100).

	Wheat (1)	Maize (2)	Oats (2)
1925	174	165	157
1926	154	127	135
1927	148	132	154
1928	134	166	172
1929	128	155	140

(1) Chicago Winter No. 2 in Liverpool.

(2) Yellow Plate in Liverpool.

The course of prices of the same cereal in different countries varied also with the particular monetary circumstances. Whereas the price of wheat in the exporting countries and Great Britain fell continually, in the continental European countries, where currency conditions were stabilised only relatively late, wheat prices rose up to 1926 and 1927, and then fell very heavily. It may also be noted that in the protectionist countries after currencies had been stabilised

TABLE XI. — *Price Indices of Wheat and Rye in Germany.*

(1913 = 100).

	Wheat	Rye
1925	124	120
1926	136	115
1927	135	150
1928	119	144
1929	116	116

the fall in prices even after the immediate stabilisation crisis was over, was almost as severe as in the cases of either the exporting or the free trade importing countries. The table below compares the prices movements of wheat in Canada, France, Italy (1) and shews that the fall in internal prices in 1927 as compared with 1926 in France and Italy was very much greater than in other countries. It may be noted that the Canadian index fell 17 points, or approximately 10 %, in 1929 as compared with 1927, whilst the indices in France and Italy fell nearly 8 %. It is possible that the slightly smaller fall could be attributed to protectionism, but against this it should be remarked that the German price, where protection was heavy, fell most of all (14 %).

TABLE XII. — *Indices of Wheat Prices in Certain Countries.*

(1913 = 100).

	Canada	France	Italy
1925	185	472	644
1926	170	670	712
1927	168	587	499
1928	153	580	475
1929	151	544	465

The prices in the European exporting countries, however, fell most heavily during this period, chiefly because stocks could not be so easily accumulated. Thus the price of wheat in gold francs per quintal in 1927 in Budapest averaged 29.41 and in 1929 only 21.86 whereas the price of Hard Winter No. 2 in Chicago averaged 26.25 francs per quintal in 1927 and 23.41 francs in 1929.

Thus it may be said that in general the cereal situation was shewing unfavourable tendencies well before 1929. The situation in other branches was, as has been explained, rather more favourable, as shown by the movement of prices. It was noted before that the consumption of meat was recovering during this period, whilst at the same time some elements in costs—the prices of the fodder grains were tending to diminish, to that extent assisting stock rearing. In London, prices of Argentine chilled beef rose from 65s. 4d. per cwt. in 1926 to 72s. in 1929. Similarly, New Zealand mutton rose from 67s. 7d. to 72s. 5d. Bacon prices, which fell heavily in 1927, rose again in 1928 and 1929, the price of Danish bacon in London fluctuating as follows: 1926, 137s.; 1927, 107s. 6d.; 1928, 110s. 5d.; 1929, 128s. 4d. per cwt. In comparison with cereals, meat prices on the continent were very favourable. In

(1) See above for Britain and Germany.

France, meat prices were much less affected by the fall in prices preceding the stabilisation. The following figures indicate the movement. Beef prices, as can be seen, were weakest, but the price of mutton moved upwards without interruption. It may be recalled that the number of cattle increased most during these years, and the recovery in numbers also resulted in a decrease of imports. In Germany a similar increase in the profitability of livestock, as compared with cereals, also occurred. Thus the wholesale price of beef in Berlin in 1926 averaged 182 RM. per quintal and 189 RM in 1929. The price of pork also rose from 197 to 207 RM. per quintal in the same years, though having fallen somewhat in between.

TABLE XIII. — *Meat Prices in France.*

	1925	1926	1927	1928	1929
Beef.	854	941	923	844	991
Mutton	1306	1474	1548	1634	1841
Pork	925	1158	1179	1112	1305

The number of cattle increased most during these years, and the recovery in numbers also resulted in a decrease of imports. In Germany a similar increase in the profitability of livestock, as compared with cereals, also occurred. Thus the wholesale price of beef in Berlin in 1926 averaged 182 RM. per quintal and 189 RM. in 1929. The price of pork also rose from 197 to 207 RM. per quintal in the same years, though having fallen somewhat in between.

The profitability of livestock rearing was also affected by the growing demand for dairy produce. The price of butter for example increased substantially during these years. Thus taking 1926 as = 100 the price of New Zealand butter in London had risen in London to an average of 104, and the price of Argentine to 108. In France the wholesale price rose by approximately 50 %. In Germany the price fell in 1929 to 101 as compared with 105 in 1928. Only the price of Danish butter had fallen in 1929 below the 1926 level, to which contributed both overseas competition and greater production and marketing efficiency.

(to be concluded)

A. EMANUEL.

THE SOCIAL INCOME AND FAMILY FARM EARNINGS OF FARM FROM 1927-28 TO 1931-32

[Denmark, Switzerland, Austria, Latvia, Estonia, Lithuania, Poland, Norway, Finland, Sweden, Germany, Netherlands (Overijssel), etc.].

The farming enterprise provides an income or return to the farmer himself, but also to the workers he employs, to the creditors and to the State which collects the taxes. In other words, a part only of the total income from the farm falls to the farmer, the rest passes into the hands of third parties. In the science of economics, among the totality of incomes or returns, this total income of the farm has been given the name of *social income*.

The operator's return is also called the family farm earnings; it is composed of the fair wage claim for unpaid labour of the operator and his family and the return on own capital. The share of the social income which the family farmer must hand over, irrespective of the success of his enterprise, to third parties, consists in the wages of the workers engaged by him, in the taxes and interest paid on debts. It need scarcely be pointed out that the more this part increases at the expense of the other, the more limited becomes the purchasing power of the farming family and the more difficult any saving. Since the accountancy offices of Denmark, Norway and Sweden have not supplied information relating to interest paid on debts, the farms of those countries may be considered as free from debts. This fact will not however interfere with our purpose of ascertaining precisely the variations occurring in the distribution of the components of the social income.

The following tables may now be examined and commented on as the examination proceeds.

It appears that in normal times, taking the figures relating to 1927-30, half at least of the social income remains in the hands of the farmer. Germany forms an exception, because in that country, properly speaking, we have not to do with family farms, seeing that the Berlin Accountancy Office places in the class of family farms all those with a cultivated area ranging from 5 to 200 hectares.

In 1931-32 the Polish peasant farmers still retained the half of the social income; actually they employ little outside labour. Those in Norway, Finland, Lithuania and Estonia remained in possession of from 40 to 50 per cent. of the social income, while 60 to 70 per cent. went to the third parties in the case of the peasant or family farmer of Latvia, Austria, Switzerland and Denmark. In the Netherlands (Overijssel) and in Germany, the social income no longer covered the total of the taxes, wages and interest on debts put together; to meet his obligations, the farmer is forced to make these payments out of his own capital.

This disproportion will be found to widen as the size of the farm increases from the fact that the larger the farm, the higher the wage bill. For the benefit of the reader not familiar with the problems to which farm accountancy gives rise, it may be noted that the large farm is essentially an investment of capital, and that the success of the operator is almost exclusively appraised from the net return which is the actual return on the capital invested. Naturally capital is also invested in the family or peasant farms.

These farms however do not belong as do the large farms to an owner who does not himself work the land and for whom the farm is a commercial or industrial undertaking. On the contrary the family farmer, or the farming tenant with his family, works on the land belonging to him or rented by him; he engages farm workers only in so far as the family labour does not meet all requirements; it is his business rather to live than to make money.

A conclusion of some importance emerges; namely, that it is the share of the social income falling to the cultivator which is subject to considerable variations; no striking fluctuations occur in the taxes, nor in the interest payments on debts nor even in the wages bill or the wage claim for the work of the farmer's

Percentage Composition of the Social income.

	INCOME PASSING TO THIRD PARTIES				OPERATOR'S RETURN			Social income
	Taxes	Interest on debts	Wages of employees	Total	Wage claim for work of family	Return on own capital	Total	
DENMARK:								
1927-30 General averages . . .	7.65	—	42.22	49.87	22.19	27.94	50.13	100
1930-31 " " . . .	10.63	—	56.49	67.12	31.45	1.43	32.88	100
1931-32 " " . . .	11.95	—	59.94	71.89	32.11	4.00	28.11	100
1931-32:								
Farms of less than 10 ha. .	7.37	—	14.73	22.10	83.85	5.95	77.90	100
" from 10 to 20 ha. .	9.95	—	41.18	51.13	58.82	9.95	48.87	100
" from 20 to 30 ha. .	11.40	—	48.25	59.65	41.23	0.88	40.35	100
" from 30 to 50 ha. .	11.28	—	54.87	66.15	37.44	3.59	33.85	100
" from 50 to 100 ha. .	11.89	—	60.00	71.89	29.73	1.62	28.11	100
" over 100 ha. . . .	13.66	—	77.60	91.26	14.21	5.47	8.74	100
OVERIJSEL:								
1927-30 General averages . . .	2.39	—	31.45	33.84	42.43	23.73	66.16	100
1930-31 " " . . .	3.08	14.39	35.22	52.69	46.01	1.30	47.31	100
1931-32 " " . . .	9.16	16.55	76.61	102.32	130.17	132.49	2.32	100
1931-32: Grazing Districts . .	13.15	17.75	68.86	99.76	113.59	113.35	0.24	100
Ijsselstreek	13.11	19.73	95.36	128.20	98.36	126.56	28.20	100
Sandy Districts	5.34	14.07	78.67	98.08	158.99	157.07	1.92	100
Sand and peat Districts . . .	13.87	13.05	133.64	160.56	267.53	328.09	60.56	100
Marshy Districts	2.50	21.68	54.16	78.34	22.46	0.80	21.66	100
GERMANY:								
1927-30 General averages . . .	9.96	—	72.59	82.55	9.86	7.59	17.45	100
1930-31 " " . . .	9.21	24.30	72.89	106.40	11.80	18.20	6.40	100
1931-32 " " . . .	10.71	27.96	73.52	112.19	13.69	25.88	12.19	100
1931-32: (a) Farms engaged in stock farming:								
West and South: 5 to 20 ha.	8.18	18.26	27.40	53.84	90.38	44.22	46.16	100
20 to 100 ha. . . .	11.51	21.82	61.21	94.54	40.00	34.54	5.46	100
over 100 ha. . . .	12.87	32.16	84.21	129.24	10.53	39.77	29.24	100
East: 5 to 50 ha. . . .	7.91	22.59	41.81	72.31	46.33	18.64	27.69	100
50 to 200 ha. . . .	8.03	31.38	70.80	110.21	17.52	27.73	10.21	100
over 200 ha. . . .	10.77	38.46	92.31	141.54	6.92	48.46	41.54	100
(b) Farms growing cereals:								
West and South: 5 to 20 ha.	8.17	15.92	28.57	52.66	72.24	24.90	47.34	100
20 to 100 ha. . . .	10.61	18.36	58.78	87.75	24.49	12.24	12.25	100
over 100 ha. . . .	10.51	27.31	78.15	115.97	7.14	23.11	15.97	100
East: 5 to 50 ha. . . .	7.73	23.20	45.36	76.29	44.33	20.62	23.71	100
50 to 200 ha. . . .	9.64	32.52	72.90	115.06	14.45	29.51	15.06	100
over 200 ha. . . .	11.58	32.32	88.41	132.31	4.88	37.19	32.31	100
(c) Farms growing sugar beet:								
West and South: 5 to 20 ha.	10.00	14.86	28.57	53.43	36.86	9.71	46.57	100
20 to 100 ha. . . .	11.02	16.52	55.36	82.90	12.75	4.35	17.10	100
over 100 ha. . . .	10.80	22.44	62.05	95.29	4.43	0.28	4.71	100
East: 5 to 50 ha. . . .	8.19	21.35	45.19	74.73	25.98	0.71	25.27	100
50 to 200 ha. . . .	9.62	20.96	67.01	97.59	4.81	2.40	2.41	100
over 200 ha. . . .	10.15	27.82	74.81	112.78	2.26	15.04	12.78	100

	INCOME PASSING TO THIRD PARTIES				OPERATOR'S RETURN			Social income
	Taxes	Interest on debts	Wages of employees	Total	Wage claim for work of family	Return on own capital	Total	
SWITZERLAND:								
1927-30 General averages . . .	3.72	—	28.61	32.33	43.49	24.18	67.67	100
1930-31 " " . . .	3.27	25.41	27.17	55.85	38.99	5.16	44.15	100
1931-32 " " . . .	4.07	33.03	33.03	70.13	44.04	14.17	29.87	100
1931-32:								
Cattle Farms	4.40	—	1) 78.88	83.28	—	16.72	16.72	100
Farms exclusively grass . .	3.83	—	1) 73.65	77.48	—	22.52	22.52	100
" dairy	3.79	—	1) 74.49	78.28	—	21.72	21.72	100
" mixed	4.60	—	1) 77.76	82.36	—	17.64	17.64	100
" of alpine type	3.94	—	1) 87.10	91.04	—	8.96	8.96	100
" from 3 to 5 ha . . .	3.63	26.47	11.09	41.19	62.07	3.26	58.81	100
" from 5 to 10 ha . . .	3.76	28.03	18.21	50.00	61.56	11.56	50.00	100
" from 10 to 15 ha . .	4.40	31.76	26.87	63.03	50.65	13.68	36.97	100
" from 15 to 30 ha . .	4.06	27.24	38.07	69.37	35.36	4.73	30.63	100
" over 30 ha	6.00	28.30	58.75	93.05	25.90	18.95	6.95	100
WURTEMBERG:								
1927-30 General averages . . .	9.42	10.91	49.12	69.45	30.44	0.11	30.55	100
1930-31 " " . . .	9.83	13.12	62.02	84.97	30.11	15.08	15.03	100
1931-32 " " . . .	13.01	17.52	61.87	92.40	40.29	32.69	7.60	100
1931-32:								
Foreland of Black Forest and Alb.	11.72	21.63	62.86	96.21	31.71	27.92	3.79	100
Middle and Lower Neckar . .	13.95	19.28	66.80	100.03	30.95	30.98	0.03	100
Plain of Hohenloher	14.24	12.20	53.74	80.18	70.49	50.67	19.82	100
Opfer Swabia	12.40	14.14	49.77	76.31	46.60	22.91	23.69	100
AUSTRIA:								
1927-30 General averages . . .	4.83	—	31.69	36.52	40.24	23.24	63.48	100
1930-31 " " . . .	6.23	5.89	37.66	49.78	44.03	6.19	50.22	100
1931-32 " " . . .	7.57	8.09	43.44	59.10	53.29	12.39	40.90	100
1931-32:								
Farms growing cereals . . .	8.24	8.37	35.33	51.94	57.17	9.11	48.06	100
Mixed farms with alpine pasture	7.34	5.19	25.71	38.24	62.59	0.83	61.76	100
Mixed farms without " " . .	6.79	7.29	46.83	60.91	45.61	6.52	39.09	100
Dairy farms with " " . . .	7.29	10.61	53.03	70.93	74.00	44.93	29.07	100
Dairy farms without " " . .	9.60	10.10	40.11	59.81	74.14	33.95	40.19	100
Farms of alpine type " " . .	7.60	12.79	62.29	82.68	51.64	34.32	17.32	100
Farms of forest	9.25	12.23	57.03	78.51	44.98	23.49	21.49	100
NORWAY:								
1927-30 General averages . . .	1.13	—	43.60	44.73	34.86	20.41	55.27	100
1930-31 " " . . .	1.27	—	48.83	50.10	34.33	15.57	49.90	100
1931-32 " " . . .	1.58	—	51.35	52.93	39.43	7.04	47.07	100
1931-32: Oestlandet	1.61	—	54.30	55.91	34.11	9.98	44.09	100
Trøndelag	1.45	—	38.86	40.31	52.17	7.52	59.69	100
Vestlandet	1.32	—	34.97	36.29	62.19	1.52	63.71	100
Sørlandet	1.61	—	53.18	54.79	50.17	4.96	45.21	100
SWEDEN:								
1927-30 General averages . . .	—	—	1) 86.24	86.24	—	2) 13.76	13.76	100
1930-31 " " . . .	—	—	1) 90.90	90.90	—	2) 9.10	9.10	100
1931-32 " " . . .	—	—	1) 92.53	102.53	—	2) 2.53	2.53	100

(1) Total Labour (employees and family — (2) Taxable net return (with taxes).

	INCOME PASSING TO THIRD PARTIES				OPERATOR'S RETURN			Social income
	Taxes	Interest on debts	Wages of employees	Total	Wage claim for work of family	Return on own capital	Total	
SWEDEN (Continued):								
1931-32: Upper Norrland:								
Farms of less than 10 ha.	—	—	1) 104.54	104.54	—	2) 4.54	4.54	100
" of 10 to 25 ha . .	—	—	1) 90.00	90.00	—	2) 10.00	10.00	100
Lower Norrland:								
Farms of less than 10 ha.	—	—	1) 101.36	101.36	—	2) 1.36	1.36	100
" of 10 to 25 ha . .	—	—	1) 85.78	85.78	—	2) 14.22	14.22	100
Centre:								
Farms of less than 10 ha.	—	—	1) 100.90	100.90	—	2) 0.90	0.90	100
" of 10 to 25 ha . .	—	—	1) 108.91	108.91	—	2) 8.91	8.91	100
" of 25 to 50 ha . .	—	—	1) 85.63	85.63	—	2) 14.37	14.37	100
" of 50 to 100 ha . .	—	—	1) 111.20	111.20	—	2) 11.20	11.20	100
" over 100 ha . . .	—	—	1) 114.40	114.20	—	2) 14.40	14.40	100
South:								
Farms of 10 to 50 ha . .	—	—	1) 74.28	74.28	—	2) 25.72	25.72	100
" of 50 to 100 ha . .	—	—	1) 82.49	82.49	—	2) 17.51	17.51	100
" over 100 ha . . .	—	—	1) 93.29	93.29	—	2) 6.71	6.71	100
FINLAND:								
1927-30 General averages . . .	2.88	—	44.92	47.80	32.86	19.34	52.20	100
1930-31 " " . . .	2.15	11.20	43.65	57.00	34.13	8.87	43.00	100
1931-32 " " . . .	2.17	12.94	41.35	56.46	31.87	11.67	43.54	100
1931-32:								
Farms of less than 10 ha.	1.11	9.68	17.25	28.04	63.70	8.26	71.96	100
" of 10 to 25 ha..	1.67	10.93	28.60	41.26	49.07	9.07	58.74	100
" of 25 to 50 ha . .	2.20	12.38	41.77	56.35	27.95	15.70	43.65	100
" of 50 to 100 ha . .	2.70	14.47	55.97	73.14	12.61	14.25	26.86	100
" over 100 ha . . .	3.26	19.71	64.23	87.20	8.06	4.74	12.80	100
POLAND:								
1927-30 General averages . . .	2.82	—	21.62	24.44	35.52	40.04	75.56	100
1930-31 " " . . .	4.67	21.11	27.15	52.93	56.39	9.32	47.07	100
1931-32 " " . . .	5.26	18.06	25.59	48.91	63.55	12.46	51.09	100
1931-32: South	4.05	10.51	21.11	35.67	60.11	1.78	64.33	100
East	4.71	11.80	24.45	40.96	71.72	12.68	59.04	100
Centre	6.71	14.51	20.73	41.95	66.41	8.36	58.05	100
West	5.56	19.88	37.87	63.31	56.22	19.53	36.69	100
Farms of 2 to 5 ha . .	3.72	7.60	11.28	22.60	88.01	10.61	77.40	100
" of 5 to 10 ha . .	5.10	25.63	13.37	44.10	76.34	20.44	55.90	100
" of 10 to 15 ha . .	5.46	8.04	22.05	35.55	61.71	2.74	64.45	100
" of 15 to 30 ha . .	6.52	11.92	32.60	51.04	51.06	2.10	48.96	100
" of 30 to 50 ha . .	8.31	6.57	43.98	58.86	47.09	5.95	41.14	100
LITHUANIA:								
1928-30 General averages . . .	3.91	5.67	44.33	53.91	29.13	16.96	46.09	100
1930-31 " " . . .	4.48	10.59	50.13	65.20	24.58	10.22	34.80	100
1931-32 " " . . .	4.81	4.71	41.89	51.41	54.01	5.42	48.59	100
ESTONIA:								
1927-30 General averages . . .	2.31	11.76	28.25	42.32	56.43	1.25	57.68	100
1930-31 " " . . .	2.55	17.32	25.58	45.45	63.78	9.23	54.55	100
1931-32 " " . . .	3.33	24.60	28.61	56.54	78.61	35.15	43.46	100

(1) Including wage claim for work of family. — (2) Taxable net return (with taxes).

	INCOME PASSING TO THIRD PARTIES				OPERATOR'S RETURN			Social income
	Taxes	Interest on debts	Wages of employees	Total	Wage claim for work of family	Return on own capital	Total	
LATVIA:								
1927-30 General averages . . .	2.32	—	40.20	42.52	40.45	11.03	57.48	100
1930-31 " " . . .	2.50	3.27	40.36	46.13	40.04	13.83	53.87	100
1931-32 " " . . .	4.79	5.04	54.34	64.17	71.53	35.70	35.83	100
1931-32:								
Vidzeme	5.28	7.26	48.36	60.90	80.85	41.75	39.10	100
Kurzeme	5.54	5.81	54.02	65.37	80.68	40.05	34.63	100
Zemgale	5.29	4.92	57.44	67.65	57.93	25.58	32.35	100
Latgale	4.96	5.35	21.42	31.73	104.70	39.43	68.27	100
Farms under 20 ha	3.82	5.98	21.56	31.36	91.18	22.54	68.64	100
» of 20 to 50 ha	4.89	4.62	39.90	49.41	89.36	38.77	50.59	100
» over 50 ha	6.30	7.24	71.66	85.20	54.47	39.07	14.80	100
SCOTLAND:								
1931-32:								
Cattle farms, North East . .	1.05	—	1) 74.42	75.47	—	24.53	24.53	100
Dairy farms, North East, South West	1.00	—	1) 48.74	49.74	—	50.26	50.26	100
Border sheep farms	2.43	—	1) 127.06	129.49	—	29.49	29.49	100
Mixed farms with sheep, East.	0.94	—	1) 61.49	62.43	—	37.57	37.57	100
FRANCE (Soissons):								
1931-32:								
Farms with industrial cultivation	4.53	—	70.97	75.50	15.24	9.26	24.50	100
RUMANIA:								
1931-32:								
Farms growing cereals . . .	6.76	5.18	8.66	20.60	28.28	51.12	79.40	100
HUNGARY:								
1931-32:								
Transdanubian farms:								
2.8 to 10 ha	16.06	16.10	16.34	48.50	123.16	71.66	51.50	100
10 to 20 ha	15.85	9.86	31.49	57.20	79.54	39.74	42.80	100
CZECHOSLOVAKIA:								
1931-32:								
Livestock farms:								
West	4.09	2) 61.09	35.58	100.76	57.91	58.67	0.76	100
East	2.42	2) 5.89	26.30	34.61	68.14	2.75	65.39	100
Farms growing sugar beet:								
West	5.51	2) 14.87	41.99	62.37	33.55	4.08	37.63	100
East	6.49	2) 18.66	37.53	62.68	86.84	49.52	37.32	100
Farms growing potatoes:								
West	4.31	2) 9.69	33.24	47.24	43.84	8.92	52.76	100
East	5.30	2) 16.61	38.33	60.24	98.27	58.51	39.76	100

(1) Total Labour (family and employees) — (2) Including tenancy.

family. In consequence when the percentages representing the share of the social income falling to third parties are seen to be increasing, it may be concluded that the social income has decreased. Whether the returns obtained are remunerative or not, the farmer must meet his obligations, and in time of crisis it comes to this: that there is no longer available for him that fraction of the gross return (the operator's or family farm return) which up to then he was able to use without reducing his own capital. Now he finds himself faced with one fraction of the social income, which remains on the whole constant, and another highly variable, *viz*, the return on his own capital.

The countries may now be examined in turn.

DENMARK

From 1927-30 to 1931-32, the operator's return was reduced by about one half.

The return on own capital becomes negative. The results of the farms of 50 to 100 ha. are indistinguishable from the average results of the whole country, except for the wage claim for the work of the family and the return on own capital.

At the one extreme of this average are found the farms of over 100 hectares with an operator's return much below and a return to third parties much above the average. At the other extreme are found the groups of farms of less than 30 ha.

From 1927-30 to 1931-32, conditions changed in a similar way in Switzerland, in Austria, in Latvia and in Norway, if only the margin between the operator's return and that falling to third parties is considered; but the case is quite other if attention is focussed on the variations in the return on own or family capital which gives, taken together with the interest on debts, the net return. It is thus on the fluctuations in this return on own capital that those of the other components of the social income depend.

SWITZERLAND

The family farmer of the "alps" or mountain pastures lives under the least favourable conditions; the best placed are those who conduct exclusively grass farms and dairy farming enterprises. Here as everywhere else, it is the small farm holding which best repays the work of the farmer and his family. For some time past the principle has been established by rural economy that the smaller the farm the higher, per unit of area, is the social income; agriculture sustains a denser population in proportion to the extent of the diffusion of the system of small farming. These advantages become however less real, the less suited a country is to a dense population and to the introduction of intensive systems of farming.

AUSTRIA

The social income obtained in 1931-32 on mixed farms with alpine pasture stands among the highest; two-thirds of the social income remains to the family farmer who does not need to engage much outside labour and whose return on

own capital has not fallen excessively. On mixed farms without such pasture and on farms growing cereals, this return also has not fallen too markedly below zero, but in these cases the wage bill absorbs a larger proportion of the social income than the wage claim for the labour of the farmers' family, so much so that he loses about two-thirds of the social income. Farmers conducting dairy farms without alpine pasture have also succeeded in keeping for themselves more than a third of the social income, but this is due to the large share taken by their families in the work of the farm, as the level of the return on own capital is very low in their case. This latter is lower still in the case of the dairy farms with alpine pasture and the total family farm earnings reflect this difference.

Relatively to the total, the interest on debts and the costs of paid labour are higher on the alpine and forest farms than on those the tendencies of which have just been described, hence the alp farmer and the family farmer with much forest land draw a much smaller operator's return than the other classes.

LATVIA

Taking the average, the return on own capital shows a more marked diminution in Latvia from 1927-30 to 1931-32 than in Denmark, Switzerland or Austria, although the operator's return has not fallen in the same proportion. The Latvian family farmer reduced in 1931-32 the costs of paid labour by 10 gold francs per ha., and hence much the largest component of the social income is the wage claim for the work of the farming family. This family labour charge is highest in the region of Latgale—the fair wage claim is there 64 gold francs as compared with 40 about in the other provinces. In consequence in this region of Latgale operator's return is very high in proportion to the total income from the farm. In the region of Zemgale, if the return on own capital has fallen less than in the other three regions, taxes, interest on debts, costs of paid labour having remained at the same level, the wage claim for the work of the farmer's family, and, incidentally, the social income in itself, are higher than in previous years. It appears that in this region of Latvia which has been called the granary of Courland, there is a denser farming population living on the produce of the land.

ESTONIA

The composition of the social income, and the variation in this from 1927-30 to 1931-32 are the same as in Latvia, with this difference that in Estonia the proportion going to the operator's family for its work is higher, and that the return on own capital was already negative in 1930-31.

LITHUANIA

The fall in the return on own capital in 1931-32 was in much smaller proportions than in Latvia and Estonia; the family farm income was not reduced to the same extent as the social income, as the farmer had engaged fewer paid workers than in previous years and had replaced them by members of the family.

POLAND

Here as in Estonia, in 1930-31, the return on own capital had begun to become negative; in 1931-32 however it had not fallen so far below zero as in Estonia. The percentage composition of the social income is of the same type as in the other Balkan countries. Passing from the South to the East, from the East to the centre and thence to the West, the proportion representing the operator's return or family farm income is seen to shrink. It is in the south that the splitting up of holdings is most general; family labour is more widely employed there than elsewhere on the farms; it is in the South too that the earning capacity of agriculture is highest. The proportion of the family labour increases still more in the East, but there the less favourable natural conditions depress the earning capacity level, and return on own capital, net return, operator's income are each and all much lower.

In the Centre the soil is more fully cultivated; the land gives employment to more persons than in the East; and as family labour is much employed, the operator's return has risen as compared with previous years. In percentage of the total, however, this return is lower than in the East and South, for the reason that the interest on debts and taxes are much higher in the Centre. It is in the West that the interest payments on debts, as well as the costs of paid labour are most considerable; farming expenses in general are too high in comparison with the gross returns obtained; the return on own capital has declined more markedly than anywhere else; the family farmer no longer retains more than about one third of the social income, while the farmer in the South still keeps two thirds.

The size of farms in Poland has a similar effect on the returns in the sense that the larger the farm, the smaller the social income per unit of area and the more does the operator's return contract in proportion, while the income falling to third parties increases in proportion to the total social income.

The group of farms from 10 to 15 ha. is an exception to the rule, the combination of factors is so far favourable that the return on own capital remains positive and that, expressed as a percentage of the social income, the operator's return is nearly as high as that given by the farms of from 2 to 5 ha.

NORWAY.

The return on own capital weakens rapidly, although not reaching, except in Förlandet, so low a level as in the other countries. In consequence the charges for paid labour become an increasing burden on the farmer.

To judge by the percentages relating to the return on own capital (or the net return in this case, since interest payments on debts, for want of information have had to be excluded from the social income), earning capacity in 1931-1932 has been better in Ostlandet than in Trøndelag, better in Trøndelag than in Vestlandet, and better even in this latter region than in Sörlandet. The Vestlandet farms are on the average smaller than those of Trøndelag, those again smaller than the Ostlandet farms, and passing from the first of these

regions to the last, the share, in proportion of the total, falling to the operator will be seen to decrease progressively, mainly because of the larger employment of outside labour. In Förlandet, the family labour and the paid labour are on an equality, but here the net return is negative and the operator's return is affected thereby.

FINLAND.

Finland may be conveniently treated apart, as the conditions, from the standpoint taken here, have varied very little from 1927-30 to 1931-32. The earning capacity fell sharply from 1927-30 to 1930-31; it recovered in 1931-32. The return on own capital in no case falls below zero. The lowest level is reached on the farms of more than 100 ha.: the costs of paid labour are there too high. The highest percentage expressing the return on own capital is found on the farms of medium size, *i. e.*, from 25 to 50 and from 50 to 100 hectares, for those of less than 10 or of 10 to 25 ha. the wage claim for work done by the family is too large. Here as elsewhere it is the farms of less extent which yield for the farmer a share higher than the shares that must be first set aside to satisfy those who have claims upon him.

SWEDEN.

The social income cannot be compared with that in other countries as there is no information on the value represented by taxes and interest payments of debts. In this case the operator's income is simply the taxable net return.

GERMANY.

This is a country where in 1930-31 and in 1931-32 the family farm income or operator's return became negative. The reason for this lies in the fact that the average extent of the farms is very high. The large farmer no longer sees the product of his work, he finds himself obliged to draw on his capital. At the end of the season, the small farmer on the other hand still retains in 1931-32 a share larger or smaller according to the size of his farm. This is true up to a size limit of 100 hectares in the West and 50 in the East for farms engaged especially stock farming and cereal growing; of 200 ha. in the East where sugar beet is grown. All sugar beet growers in the West, even if the extent of the farm is over 100 ha., secure a positive operator's return, even though small.

In Wurtemberg, the return on own capital in 1931-32 falls further below zero than in the other parts of Germany; the operator's return remains positive, because the farms on the average are less extensive and the cost of paid labour is thus less. On examining the four regions included on the Table, one negative operator's return will be found—that of the farms of Middle and Lower Neckar. When the earning capacity of the farms of Wurtemberg was under consideration, the following decreasing order was noted: farms of the foreland of the Black Forest and of the Alb, farms of Upper Swabia, Middle and Lower Neckar, and the Plain of Hohenloher.

On the basis of the height in gold francs of the social income per hectare, the following order is obtained:

Middle and Lower Neckar	360
Upper Swabia	277
Foreland of the Black Forest and Alb	268
Plain of Hohenloher	198

Clearly the height of the social income depends to a much greater extent on that of the gross return than on that of the farming expenses. Keeping however to that part of the social income which is the recompense of the farmer, it will be recognised that the family farmer of Upper Swabia has a marked advantage over those of the other regions. On the Plain of Hohenloher, a larger number of families cultivate a less remunerative soil: in the foreland of the Black Forest and in the Alb, proportionately more is spent on wages and for payment of debts; in the Middle and Lower Neckar, there is a still larger employment of outside labour, interest on debts stands high, and the family farmer has nothing for himself although his farm yields the highest total income.

OVERIJSSSEL (NETHERLANDS).

The net return in this part of the Netherlands has suffered a fall so great as to exceed the decline in the level of earning capacity experienced in the other countries. Fortunately the work of the family bulks large; the family farmer's return thus decreases in a much less degree than does the return on own capital. Except for Ijsselstreek and in the sand and peat districts, the operator's return (or family farm income) is sufficient to meet the farm requirements. The best results are given by the farms of the marsh districts, both absolutely relatively to the cultivator and the capital invested. It is primarily a question of quality of lands and of natural conditions.

It remains to examine the groups of Scottish, French, Rumanian, Hungarian and Czech farms the accountancy results of which are available.

For Scotland, the percentages entered under operator's return represent the net return, since it has not proved possible to isolate the fair wage claim for work of the family nor the interest payments on debts. By unit of area the mixed farms raising sheep have given the highest social income; then come the dairy farms of the North-East and South-West: then the farms of the North-East engaged in cattle farming; and finally Border farms exclusively engaged in sheep farming. The dairy farms have had much lower labour costs than the mixed farms raising sheep, and here the farmer reaps the advantage.

At Soissons (France), a region of industrial cultivation, where the predominant type is the large farm, neither the interest on own capital nor the operator's return have fallen so low as on the large farms in Germany, Sweden or other countries.

The return on own capital and the operator's return are very high in relation to the total on the Rumanian farms cultivating cereals; the costs of outside labour are very low.

The costs of paid labour are also very small on the Hungarian farms of 2.8 to 10 hectares; and it is for this reason that the operator's return, in spite of the disastrous position of the return on own capital, is as large as half the social income. On the farms of 10 to 20 ha., the return on own capital has not fallen quite so low, but on the other hand the expenses of paid labour are more considerable.

In Czechoslovakia, the groups of forage crop farms include too few farms for it to be possible to make deductions. Again, if the number of farms were adequate, there would not be that disproportion in the interest on debts in the case of the farms of the West engaged in live stock farming, as now appears in the Table.

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The report of the discussions and the collection of reports presented are of great interest to all those who may wish to follow the evolution of the corporative movement, according to the most modern juridical conceptions, and the essential part played in that movement by agriculture].

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DEVELOPMENT OF THE PRODUCTION, IMPORTATION AND CONSUMPTION OF MEAT IN GERMANY

I. — THE LIVE STOCK TRADE.

Stock breeding in Germany has since the end of last century undergone considerable changes alike in composition and in extent. While there has been a continuous increase in the number of cattle and especially in that of pigs, the number of sheep has diminished. The causes at work here are: the increasing demand for animal food stuffs in consequence of the growth of the population and in the changes that have come about at one and the same time in the habits of ordinary life and in diet on the one hand, and on the other the extension of live stock farming in overseas countries.

For the meat supply very great importance attached to the extension of *pig breeding* by which over 60 per cent. of the requirements in meat were met. The number of pigs rose from 7,120,000 head in 1873 to 25,660,000 in 1913. *Cattle farming* on the other hand was mainly directed towards dairying. Owing to the constantly increasing demand for fresh milk and milk products, the number of cattle rose from 15,780,000 in 1873 to 20,990,000 in 1913. About one third of the meat supply was ensured by the keeping of cattle. Equally important with these numerical increases of cattle and pigs was the immense progress made by systematic breeding and scientific feeding which accompanied the advances made in all branches of agricultural production.

The marked reduction in *numbers of sheep* from 25,000,000 in 1870 to 5,500,000 in 1913 was brought about by the general transition to a more intensive farming, as also by the fact that cattle and pigbreeding proved to be more remunerative, as wool could be obtained in volume cheaper from the overseas countries. Sheep farming in Germany, up to that time by far the most important branch of stock farming in the great pastoral regions of the country, lost its importance for wool production and therewith almost all its justification for existence, as the meat supply from the flocks formerly kept had always been a minor consideration. In districts where sheep farming was still maintained, this was made possible only by the change that took place in the direction given to the breeding, namely, primarily towards meat production. Along with this, wool production remained of some importance but was no longer as before the determining factor in the earning capacity of the sheep farming. In consequence of the earlier maturity of the animals, turnovers were more rapid and even with reduced numbers a considerable supply of meat was obtainable.

During the war, the head of live stock in Germany became greatly reduced, except for sheep and goats, the total of which showed an increase. Reconstitution of the live stock industry was accomplished after the war only by slow degrees. Along with a purely numerical reconstitution, more emphasis than before was laid on improvement in yields. Breeding with this objective was encouraged by a number of measures, emanating directly or indirectly from the State or receiving its support and stimulation. There will be recalled in this connection the more complete establishment of the Herd Book system together with that of the stock shows, of the yield tests, of the breeders' associations and of the regulations for the approving of breeding animals. The number of officials dealing with stock breeding was considerably increased. A special movement for the improvement of grass and pasture land made its appearance.

It was not till 1930 that the pre-war level in head of cattle was reached once more. In the following years, a regular increase in numbers was maintained and in December 1933 the peak figure was reached, *viz.*, 19,700,000 head. In 1934 not only was the upward movement arrested, but a decrease was noted of some 574,000 head. This falling off was largely due to a limitation in the breeding of calves, the total of which showed a decrease of 324,000 head or one fifth, a decrease in the numbers of older bulls and oxen by 49,000 and of two year old and older cows by some 132,000 head. There was no appreciable change in the number of dairy cows which stood at over 10,000,000. These decreases in the herds were due to the exceptional drought of 1934, in which year the forage crops were far below their normal level. This was the more serious a drawback as it coincided with the necessity for limiting imports of feeding stuffs in consequence of the state of the foreign exchange. In 1935 the forage crop was again far from satisfactory, and there was a further reduction in head of cattle by 344,000, this time affecting the young stock, bullocks, bulls and cows. The abnormal number of slaughterings was also in part to be attributed to the scarcity of pork which was noticeable at the end of the year. The number of calves under three months old at the beginning of December 1935 was 88,700 head higher than the number in the month of December of the previous year.

The effect of the increase in head of cattle on the meat supply of the country was not that which might have been expected, since even with these higher total numbers the demand is mainly for milk. This is even more markedly the case now than before the war; in comparison with the total numbers, the number of dairy cows has further increased. The decrease in relation to the pre-war totals of the number of bulls and bullocks is equally remarkable, a decrease chiefly affecting work animals and fat stock. This is in part due to the more extensive use of machinery, which has led to a reduction in the number of draught oxen, in part also to the lower prices of meat as compared with milk prices. The importance of milk production is shown by the following figures relating to the increase in this production (1).

(1) H. v. d. DECKEN: Deutschlands Versorgung mit landw. Erzeugnissen. Berichte über Landwirtschaft, 115. Sonderheft, Berlin 1935.

Years	Head of dairy cattle in millions	Annual milk production per dairy cow in litres	Total production of milk in millions of litres
1925	9.1	1,900	17.5
1927	9.4	2,150	20.0
1929	9.4	2,200	20.7
1931	9.7	2,372	22.9
1933	10.1	2,376	24.0

Although stock farming in Germany has been largely directed towards milk production, great importance none the less is attached to a good yield in meat. In the South and Centre of Germany the work aptitude of the animals is also of importance, as in these regions oxen are used for the farm work and on the small farms in the first place or even exclusively cows. German herds are mainly made up of breeds of several aptitudes, and single aptitude breeds have local importance only. Of the total cattle in Germany only about 1.5 per cent. belong to the Angler breed or to the Shorthorn breed. Angler cattle are raised in the Angeln district on the east coast of Schleswig simply for milk production and Shorthorn cattle are bred on the west of Schleswig, as in England, the home country, for meat production. Among the other multiple aptitude breeds, two main groups may be distinguished: the mountain breeds and the breeds of the plains.

According to a census taken in 1925 by the D. L. G. the total head included 43.4 per cent. of mountain breeds and 56.6 per cent. of the breeds of the plains. These latter are found throughout North Germany and from the shores of the Black Sea and the Baltic to the mountains of Central Germany, where the zone of the mountain cattle begins. According to the same return, the breeds of the plains in the course of the last few decades have gained ground at the cost of the mountain breeds, a proof that the importance of milk production for German stock farming has increased, since milk productivity is on the whole greater with the breeds of the plains. In the zone of the breeds of the plains the black piebald breeds come first with 80 per cent. of the total, while among the mountain breeds the large spotted cattle predominate with 67 per cent.

In 1927 the number of *pigs* had reached the pre-war level, and this level was maintained till 1934, in spite of wide fluctuations corresponding to the price variations. In 1935 there was a marked decline due to the same causes as brought about the decline in cattle. At the beginning of December 1935 the number of pigs was still below that in the month of December of the previous year, but the lowest level registered during the summer of 1935 was already exceeded.

As regards the composition of breeds of pigs in Germany, the former indigenous breeds have nearly disappeared. The white "Edelschwein" and the improved native breed give a distinctive character to pig breeding in Germany. With these are found in smaller numbers Berkshires, Cornwalls and the usual more or less improved cross breeds.

As a result of the situation during the war, the number of *sheep*, as well as of goats, increased in Germany. The peak was reached in 1920 with 6,150,000 head; from that time onwards their number has steadily decreased. On the other hand,

very considerable success was achieved in selective breeding of sheep during the post war years.

Following on the measures taken by the Reich for the increase of national wool production, a fresh expansion of sheep farming began in 1934. At the beginning of December 1935 there were reckoned to be 3,900,000 sheep. Their yield in wool probably does not quite cover 10 per cent. of the wool requirements of Germany; for the supply of meat to the market, sheep breeding has only small importance; in the course of recent years, the mutton consumed has represented only 1.25 per cent. of the total meat consumption.

II. — MEASURES OF COMMERCIAL POLICY TAKEN TO PROTECT NATIONAL PRODUCTION AND REGULATION OF THE HOME MEAT MARKET.

With the object of protecting and encouraging national meat production measures of trade policy were taken in Germany in the post-war years in respect both of tariffs and of quotas.

In 1925 duties on agricultural products were reintroduced. By the law of 17 August 1925 the pre-war tariff of duties was restored, although with moderate transition rates for nearly all food stuffs and feeding stuffs, and also for slaughter cattle and meat. In Table II there will be found a brief statement of the course of the duties on slaughter cattle and meat.

On 1 August 1926 in place of the transitional rates the following duties came into force by agreement with Sweden: for live cattle, pigs and sheep, 16 RM per quintal; for beef and mutton, 37.50 RM; and on 1 August 1927 for pork, 32 RM. In all these cases the pre-war tariffs were not only reached but exceeded.

The tariff wall was however to some extent weakened by the fact of the lower duties on fat pork and lard and especially by the import facilities granted to frozen meat, to La Blanca Lunch Beef and Corned Beef.

Before the war, the use of frozen meat was scarcely known in Germany. This however was not due to relatively high duties, although there was a conventional duty of 27M. on chilled meat and an autonomous duty of 45 M on frozen meat. The reason for the very small importation of frozen and chilled meat was rather to be found in the regulations in force in respect of the import and inspection of meat. By paragraph 17 of the law on meat inspection of 3 June 1900, there was prohibited the import of meat in hermetically closed tins or similar containers, of sausages or other compounds of chopped meat; fresh meat was allowed to enter only as whole carcasses which in the case of pigs and of cattle (except calves if the weight of meat did not exceed 75 kg.) must be split in half, the pleura and peritoneum, lungs, heart, kidneys and, in the case of cows, the udders remaining in the natural state attached to the body of the animal.

In view of the great importance of the cheap frozen meat as the food of the population elements with low purchasing power, at the time of the reintroduction of the duties in 1925, special regulations were made for the importation of frozen and chilled meat. In paragraph 5 of the law of 17

TABLE I. — *Numbers of Cattle, Pigs and Sheep in Germany. (1)*
(thousands of head at beginning of December of the successive years)

Year	Cattle			Pigs				Sheep	Goats
	Total	including:		Total	including:				
		from 3 months to 2 years	bulls and bullocks		milch cows	young pigs	sows under 1 year			over 1 year
1913 (2)	18,474	5,449	1,309	22,533	—	—	—	4,988	3,164
1925	17,202	5,044	877	10,200	3,009	491	882	4,753	3,796
1926	17,221	4,938	793	10,424	3,914	625	1,126	4,080	3,484
1927	18,011	5,342	789	22,809	4,379	504	1,218	3,819	3,225
1928	18,414	5,058	789	20,100	4,003	556	1,093	3,635	2,890
1929	18,033	5,422	743	19,914	4,417	663	1,179	3,480	2,625
1930	18,470	5,619	761	23,412	5,409	674	1,503	3,504	2,581
1931	19,124	6,147	767	23,868	5,128	494	1,459	3,499	2,510
1932	19,139	5,994	806	22,859	4,834	485	1,384	3,495	2,503
1933	19,739	5,981	878	23,890	5,126	549	1,406	3,387	2,588
1934	19,198	6,022	729	23,170	4,512	452	1,329	3,483	2,494
1935	18,854	5,723	666	22,722	4,740	543	1,408	3,918	2,442

(1) Not including the Saare. — (2) Present territory apart from Saare.

August 1925 it is stated: " Within the limits of the present importation, frozen meat is to be admitted free of duty, provided that by the intervention of the public authorities, and as far as possible by the medium of the ordinary trade and that of consumers' co-operative societies and the Centrals of these, such meat is sold to consumers at cost price or at a price only slightly above, and under conditions making any misuse of the privilege impossible. "

The duty free quota was at first fixed at 1,200,000 quintals per annum. By the terms of a law of 30 March 1928, this quota was reduced to 500,000 quintals. By an Ordinance of 24 April 1928 the consumption of frozen meat was limited to towns and industrial areas; finally by a law of 15 April 1930 the exemption from duties and the facilities in connection with the veterinary sanitary regulations were revoked as from 1 July 1930.

In the meantime the reconstitution of duties for other types of meat had begun. By a supplementary agreement with Sweden of 30 November 1929 the tariff agreements for pigs, fresh pork, beef and mutton were annulled as from 11 February 1930; the conventional duties on live cattle were at the same time raised to 24.50 RM, and those on live sheep to 22.50 RM. On the other hand the duty on livers was lowered to 16 RM and those relating to other internal organs (tongue, heart, kidneys, spleen, etc.) or to pigs' heads or feet to 18 RM.

Important modifications and in two different directions were introduced into the tariff system by the law of 22 December 1929, which came into force on 31 December of the same year. This law raised the autonomous duties on live cattle from 18 to 27 RM, and those on sheep from 18 to 22.50 RM; it fixed minima duties of 24.50 RM for cattle, of 22.50 RM for beef and mutton and of 32 RM for pork. There was also introduced a sliding scale duty for pigs to be regulated by the market situation. On the basis of these measures, modified by the law of 15 April 1930 and suspended finally by an Ordinance of 8 February 1933, the duties in force on pigs were:—

from 28 March 1930	27 RM.
" 7 April "	18 "
" 14 April "	27 "
" 10 May 1931	40 "

For some time there remained in force a very small protective duty on fat pork and lard; this was raised only in 1932 and 1933. The first increases of duty on lard in 1933 however, had little effect, as in consequence of the depreciation of the currency in the chief exporting countries, this lard was offered at steeply declining prices; the result was a considerable increase in the importation. From 23 February 1934 fat pork, lard and crude pig fats were placed under the jurisdiction of the Office for milk products, oils and fats. From that date any one wishing to place these products on the market must apply to this Office, which is not obliged to take them over. If it refuses, then the goods cannot be put up for sale. If on the other hand they are accepted, the Office issues a delivery certificate and then hands the goods back to the consignor on payment of a differential rate (*Unterschiedsbetrag*)

allowing free disposal. The Office thus merely buys the products and resells them to the consignor and takes note only of the first sale on the home market. From this treatment there are exempt only those products which are placed on the market by wholesale butchers, butchers who keep a shop, undertakings of a similar character and direct producers. Exceptions are not as a rule made for factories of prepared meats, firms rendering lard and firms preparing neutral lard. In fixing the equalisation duties (*Ausgleichsabgaben*) or the extent of the imports themselves, the Office of the Reich can at any time regulate the prices of products imported and the volume of imports according to internal conditions of price and production.

A similar organisation has been set up to regulate the whole slaughter stock and meat market. By the law of 23 March 1934 on trade in animals and animal products, it became obligatory to sell only through an Office set up by the Minister of the Reich for Food Supply and Agriculture animals bred in Germany or imported from abroad and animal products (fresh meat and prepared meat, sausages, tripe, etc.). If the Office in question accepts the products offered, it issues a delivery certificate and then hands back the goods to the consignor on payment of a differential rate allowing free disposal. The Ministry may make exceptions in favour of certain kinds of animals and of goods placed on the market. For example trade outside the large slaughter stock markets is not subject to regulation. The import of stock and of live stock products was first regulated by an executive ordinance of 24 March 1934. In October 1934, a system of delivery certificates for the national slaughter stock market was introduced on the slaughter stock markets following on the introduction of a corresponding market organisation. The organisation of the slaughter stock market was effected by the Ordinance of 9 June 1934 and was completed by a further Ordinance of 27 February 1935. The former of these related only to the wholesale stock market and to the buyers and sellers attending this market; by the second, which came into force on 1 April 1935, an organisation for the slaughter stock trade was introduced similar to that prevailing on the other markets, *viz.*, all groups concerned in the trade in slaughter stock (producers, dealers, butchers and processors) were linked into 14 federations for the utilisation of slaughter stock, and the federations together formed the General Association of the German Live Stock Industry (*Hauptvereinigung der deutschen Viehwirtschaft*). The object of the federations is to regulate the sale, utilisation, prices and price margins of slaughter stock, meat, prepared meats and animal fats in such a way that the sale of slaughter stock and the supply to consumers may be assured at prices justified from the social and economic standpoint.

Following on the change in the situation of the national market an ordinance was enacted on 21 December 1935 with effect from 1 January 1936 to 31 December 1936, lowering various duties on slaughter stock and meat provided that the importation was effected by an organisation named by the Minister for Food Supply and Agriculture. The following are the new rates: live sheep, 16 RM; fresh beef or mutton, 24 RM; frozen meat, 10 RM. The duty on lard continues up to 30 June 1936 to be fixed at 40 RM.

TABLE II. — *Duties on Live Stock and Meat Payable by*

Date of first collection of duty	Fresh pork	Fresh beef and mutton	Pigs' heads and feet, internal organs	Pigs' livers	Cattle
					internal organs
			not frozen		
1 March 1906 to 4 August 1914	27,00	27,00	27,00	27,00	27,00
Autonomous pre-war duties	(45,00)	(45,00)	(45,00)	(45,00)	(45,00)
1 September 1925	21,00	24,00	21,00	21,00	24,00
1 November 1925	»	»	»	»	»
1 August 1926	»	37,50	»	»	»
1 August 1927	32,00	»	32,00	32,00	»
11 February 1930	45,00	45,00	18,00	16,00	18,00
28 March 1930	»	»	»	»	»
7 April 1930	»	»	»	»	»
14 April 1930	»	»	»	»	»
10 May 1931	55,00	55,00	»	»	»
5 July 1932	»	»	»	»	»
15 February 1933	100,00	100,00	21,00	21,00	21,00
16 May 1933	»	»	»	»	»
19 July 1933	»	»	»	»	»
22 October 1934	»	»	»	»	»
1 January 1936	3) 13,50	3) 24,00	»	»	»

(1) Special quotas 16 RM. — (2) Conventional duty of 20 RM per quintal on non smoked fat pork from favoured countries. — (3) So far as the importation is effected by means of an organism indicated by the

"the Most Favoured Nation" in Germany (RM per quintal).

Livers	Fat pork	Lard	Prepared meats (excl. bacon)		Live sheep	Live cattle	Live pigs
			simple preparation	specified preparation			
27,00 (45,00)	36,00 (36,00)	10,00 (12,50)	35,00 (60,00)	120,00 (120,00)	8,0 (18,00)	8,0 (18,00)	9,0 (18,00)
24,00	—	—	—	—	—	—	—
»	14,00	6,00	60,00	120,00	13,00	13,00	14,50
»	»	»	»	»	»	»	16,00
»	»	»	»	»	16,00	16,00	»
16,00	»	»	»	»	24,50	1) 24,50	18,00
»	»	»	»	»	»	»	27,00
»	»	»	»	»	»	»	18,00
»	»	»	»	»	»	»	27,00
»	»	»	80,00	150,00	»	»	40,00
»	20,00	10,00	»	»	»	»	»
21,00	36,00	50,00	150,00	280,00	45,00	1) 50,00	50,00
»	»	75,00	»	»	»	»	»
»	2) 60,00	100,00	»	»	»	»	»
»	»	40,00	»	»	»	»	»
»	»	»	»	»	3) 16,00	»	»

the quantity not exceeding 60 % of importations entering Germany in 1932 and coming from the most
Minister for Food Supply and Agriculture.

By an Ordinance of 27 December 1935, which came into force on 2 January 1936, the importation of frozen beef from South America was authorised till further notice even in quarters without the internal organs and the head, in the case of cows without the udders. Quotas are not fixed but it appears that special arrangements have been made on the subject of the volume of imports. For imported frozen meat, sold in retail, the prices have been fixed by an Ordinance of the Minister of Food Supply and Agriculture issued on 7 January 1936. Frozen meat can be imported only into the large towns and into the zones of consumption, where required and where the purchasing power of a considerable part of the population is low. Frozen meat must be thawed in the town slaughter houses on the responsibility of the director of the establishment, in order to ensure that only meat thawed out according to instructions will be placed on the market.

III. — DEVELOPMENT OF THE IMPORTATION OF LIVE STOCK AND MEAT.

The volume of German imports of live stock and meat has depended essentially in the course of the last decade on the progressive severity of the measures of commercial policy which, as has been seen, have corresponded closely with the national production and consumption.

Although the numbers of cattle and of pigs have steadily increased, Germany has been during the last few decades a large purchaser of slaughter cattle and meat. In the post war years, after the re-establishment of the currency, importation expanded to an extent unknown before. In 1925 the peak was reached, but during the two following years imports remained nearly at the same level. The decrease began in 1928, and from 1931 to 1934 the importation was only a small proportion of the former volume.

(a) *Imports of Live Stock.*

In the course of the last few decades Germany has not been only an importer of live stock, but has also exported from time to time a considerable number of animals.

According to the external trade statistics of Germany, a distinction is made in imported live stock between slaughter stock and utility animals. In 1925-1929 Germany imported on an average 20,617 head of utility animals, 255,757 head of slaughter stock, or in all 276,375 head of cattle. The imports of cattle reached the peak figure in 1927, when Germany imported 338,483 head of cattle; then they declined, at first slowly and then very rapidly from 1931; in 1933 not more than 8,313 head of utility cattle were imported, 42,066 head of slaughter animals, or in all 50,379 head. In 1934, the imports of utility animals continued to decrease, although those of slaughter animals increased. These latter noticeably increased again in 1935. Imports of utility animals in 1934.

were only 2,832 head, and in 1935 were 4,077; those of slaughter cattle amounted in 1934 to 76,723 and in 1935 to 114,096 head.

About 80 per cent. of the cattle other than slaughter cattle came from Austria, and the remainder from Danzig. In addition during the last decade some hundreds of these cattle on an average came in from Switzerland and Lithuania. Out of 4,077 head imported in 1935, 2,684 came from Austria, 965 from Danzig and 246 from Lithuania.

By far the largest supplier of slaughter animals is Denmark. During the five year period from 1925-29 Denmark consigned to Germany 205,000 animals on an average each year, thus meeting 88 per cent. of the import requirements in round figures of Germany. The remainder, taking the averages for the same period, were supplied as follows: Lithuania 20,162 head (7.88 per cent. of imports); Austria 11,704 (4.58 per cent.); Memel 4,752 and Sweden 3,022. In the following years the total importation was lower, and the contribution of Denmark was also less: 70 per cent. in 1931, in 1932 78.62 per cent. and in 1933 only 43.17 per cent. In 1934 the proportion from Denmark rose to 64.4 and in 1935 to nearly 68 per cent. Although Denmark remains the chief supplier, it should be noted that there was considerable shifting in respect of the contributions of the other countries. There was an increase in the imports into Germany from countries with surpluses that were disposed and were in a position to accept compensatory imports from Germany. The imports from Hungary rose from 479 in 1933 and 6,835 in 1934 to 11,090 in 1935 (9.7 per cent. of the total import of Germany in slaughter cattle). The import from Switzerland has fluctuated around 6,000 head in recent years. Since 1933 the Irish Free State has become a supplier, sending 5,634 head in 1933, 6,333 in 1934 and 13,013 in 1935 (11.4 per cent.). Romania was able to export in 1935 to Germany 4,181 head of slaughter cattle. On the other hand the import from Lithuania has declined; from 27,419 (9.14 per cent.) in 1929 to 10,121 (24.07 per cent.) in 1933, 5,325 (6.94 per cent) in 1934 and in 1935 only 159 head.

In certain years *German exports of live cattle* were not inconsiderable. In 1924 they amounted to some 21,000 head, then fell in 1929 to 1,631. But in 1930 there was again an increase: in that year 36,066 head were exported and 38,747 in 1931. The principal markets in 1930 and 1931 were France (12,532 and 24,842 head), and the Saar (14,329 and 8,552). In addition Germany exported in 1931 to the Russian market 2,539 head of cattle. Exports rapidly declined from 1932. The district of the Saar is the only customer and, since after the decision of 13 January 1934 this district returned to Germany, the export in 1934 fell to 865 and in 1935 to 537 head. The export to the Saar was 17,038 in 1932, 9,808 in 1933 and 487 in 1934.

The external trade in young pigs was of importance only from 1925 to 1928. The trade was mainly with the Saar and Switzerland.

In certain years both the export and import of *pigs* were fairly extensive. In some years there was a considerable excess of exports. The imports came in the first instance from Denmark and Lithuania. The export was directed mainly to the Saar and in some years also to France, Switzerland, Austria

TABLE III. — Imports into and Exports from Germany of

	1924	1925	1926	1927	1928
I. — CATTLE:					
Imports	90,733	178,877	224,780	338,483	320,300
Exports	20,738	10,448	19,349	6,746	1,237
Excess imports	69,995	168,429	205,431	331,737	319,063
2. — Young pigs:					
Imports	474	10,628	13,114	153	179
Exports	532	0	94	21,157	6,218
Excess of imports (or of exports—)	58	10,628	13,020	21,004	6,039
3. — Pigs:					
Imports	235,600	204,845	117,417	96,732	70,078
Exports	1,175	2,656	377	49,846	70,860
Excess of imports (or of exports—)	234,425	202,189	117,040	46,886	782
4. — Sheep:					
Imports	2,087	7,783	2,676	1,912	3,881
Exports	42,456	94,445	82,702	63,373	40,563
Excess of imports (or of exports—)	40,369	86,662	80,026	61,461	36,682
II. — MEAT					
1. — Beef:					
Imports:					
fresh beef	28,712	358,736	307,205	224,218	202,562
chilled and frozen beef	766,792	1,145,385	1,161,296	1,254,160	821,725
simple preparations	15,710	12,248	2,970	3,239	1,617
meat otherwise prepared (1)	599	887	81	77	54
tinned meats (1)	235,300	125,735	22,923	59,748	44,329
edible offals (liver, etc.)	28,336	26,148	20,432	18,224	12,127
Total imports	1,075,449	1,669,139	1,514,907	1,559,666	1,082,414
Exports:					
beef (fresh, chilled, frozen and simple preparations	6,153	8,428	3,067	1,305	939
tinned meat (1)	—	*) 872	4,150	6,262	9,270
Total exports	6,153	9,300	7,217	7,567	10,209
Excess of imports	1,069,296	1,659,839	1,507,690	1,552,099	1,072,205
2. — Pork:					
Imports:					
fresh pork	155,126	630,522	501,925	284,744	144,271
chilled and frozen pork	53,549	13,073	4,623	2,547	1,193
pork simple preparations	129,111	58,921	5,660	2,766	1,363
pork edible offals	44,568	45,434	37,301	26,501	22,641
salted, smoked ham	3,328	2,952	1,113	1,121	971
fat pork	269,951	93,502	102,690	52,725	36,795
Total imports	655,633	844,404	653,312	370,404	207,234

(1) Including other kinds of meat. — (*) October-December.

Cattle, Pigs and Sheep and of Beef, Pork and Mutton.

1929	Average 1925/29	1930	1931	1932	1933	1934	Average 1930/34	1935
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ANIMALS (head).

319,435	276,375	209,464	91,663	97,755	50,379	79,555	105,763	118,173
1,631	7,882	36,066	38,747	18,423	10,039	865	20,828	537
317,804	268,493	173,398	52,916	79,332	40,340	78,690	84,935	117,636
712	4,957	305	124	266	353	101	230	385
0	5,494	604	417	336	1,020	71	490	99
712	537	299	293	70	667	30	260	286
140,914	125,997	182,273	79,382	24,206	18,486	34,265	67,722	96,277
17,260	28,200	273,224	219,618	56,411	41,955	11,008	120,443	244
123,654	97,797	90,951	140,236	32,205	23,469	23,257	58,721	96,033
8,071	4,805	7,883	709	7	9	81	1,738	405
67,819	69,780	59,544	56,801	26,337	3,114	1,887	29,537	756
59,748	64,915	51,661	56,092	26,330	3,105	1,806	27,799	354

(quintals).

184,243	255,393	114,638	81,572	28,762	30,559	28,084	56,723	25,253
595,142	995,542	462,095	0	0	0	0	92,419	0
874	4,189	882	523	438	427	323	519	992
136	247	2	87	234	179	156	1,354	137
57,950	62,137	5,960	133	19	0	0	2,190	0
11,562	17,699	8,907	1,807	238	0	0	2,190	0
849,907	1,335,207	592,484	84,122	29,691	31,165	28,563	153,205	26,382
688	2,885	64,733	17,060	2,067	1,339	888	17,217	48
9,191	5,949	17,515	38,697	16,834	23,645	21,372	23,613	12,122
9,879	8,835	82,248	55,757	18,901	24,984	22,260	40,830	12,170
840,028	1,326,372	510,236	28,365	10,790	6,181	6,303	112,375	14,212
171,646	346,622	154,420	202,316	177,459	158,044	118,878	162,223	214,763
830	4,453	584	0	0	0	0	117	18,584
1,151	13,972	770	278	127	355	355	377	9,219
37,632	33,902	24,553	12,338	3,085	31	0	8,001	0
890	1,409	772	451	166	73	41	301	37
62,097	69,562	81,561	149,107	202,630	129,610	148,287	142,239	105,315
274,246	469,920	262,660	364,490	383,467	288,113	267,561	313,258	347,918

TABLE III (continued). — Imports into and Exports from Germany of Cattle, Pigs, Sheep and of Beef, Pork and Mutton.

	1924	1925	1926	1927	1928	1929	Average 1925/29	1930	1931	1932	1933	1934	Average 1930/34	1935
Exports:														
pork fresh, chilled, frozen and simple preparations	2,143	832	16,770	13,707	4,773	3,206	7,857	49,114	38,553	2,407	1,710	8,930	20,155	106
ham salted, smoked	321	717	882	1,375	1,737	1,793	1,301	2,306	4,237	1,094	1,338	427	1,880	312
fat pork	229	500	79	2,230	831	624	853	154	298	25	5	0	96	326
Total exports	2,693	2,049	17,731	17,312	7,341	5,623	10,011	51,574	43,088	3,586	3,053	9,357	22,131	744
Excess of imports	652,940	842,355	635,581	353,092	199,893	268,623	459,909	211,086	321,402	379,881	285,060	258,204	291,127	347,174
3. — Mutton:														
Imports:														
fresh mutton or simply prepared . .	942	1,774	25,355	21,574	25,311	13,003	17,403	5,101	1,464	1,770	1,576	890	2,160	137
chilled or frozen mutton	12,773	6,421	11,834	24,085	19,582	28,271	18,049	38,801	0	0	0	0	7,760	0
Total imports	13,715	8,195	37,189	45,659	44,893	41,274	35,442	43,902	1,464	1,770	1,576	890	9,920	137
Exports:														
mutton, goatflesh, etc., fresh or simple preparations	3,227	9,627	1,636	2,823	357	14	2,891	11,143	6,714	425	45	0	3,665	6
Excess of imports (or of exports—)	10,488	1,432	35,553	42,836	44,536	41,260	32,551	32,759	5,250	1,345	1,531	890	6,255	131
4. — Sausages:														
Exports	1,839	2,131	1,972	3,866	4,347	4,181	3,299	5,987	6,506	5,022	3,378	1,820	4,561	1,200
Imports	1,772	387	193	207	244	49	216	74	43	21	56	51	49	149
5. — Meat not specified	75	138	137	232	270	461	248	439	300	295	265	188	309	234

and Russia. The increased imports, made necessary in 1935 as compared with the previous year were, drawn to the extent of 44 per cent. from Denmark. Lithuania which has been in previous years the most important supplier after Denmark, no longer appears in 1935 in German trade returns as a supplier. On the other hand, as the result of trade agreements, larger consignments came from Estonia, Latvia and Poland. In 1935 Latvia exported to Germany some 30,500 pigs, representing 31.6 per cent. of the total live pig import of Germany, and consequently stands next to Denmark; Estonia contributed 14,560 (15.1 per cent.) and Poland 7,117 (5.4 per cent.) of the total import of live pigs.

In every year since 1934 Germany has had a surplus export of *sheep*. The imports have been very small during the whole of the post-war period; the export in 1925 was 94,445 head, falling gradually to some thousands only in 1933 and in 1934 to 759 head. The direction of these exports has varied greatly according to the years; the principal buying countries over the period were France, Denmark, the Saar, Switzerland and Russia.

(b) Importation of Meat.

The same tendencies may be noted in meat importation as in that of slaughter animals.

Beef imports reached their peak figure in 1925 with a total of 1,669,139 quintals. Frozen and chilled meat were the largest items in the imports, but,

after a period of quota fixing, imports under this head ceased from 1931. The principal suppliers of frozen and chilled meat were Brazil, Uruguay, Australia and especially Argentina, consignments from this last country, according to German trade statistics, exceeding those of all the other countries: out of 1,254,160 quintals representing the peak import figure of these imports in 1927, 1,150,355 quintals were supplied from Argentina alone.

The next largest item was that of fresh beef, which came mainly from the Netherlands and Denmark.

The export of beef from Germany became somewhat large only in 1930 and 1931, the chief purchasers being the Netherlands, Belgium, Luxemburg and France. In recent years the export has been mainly of tinned meat, Great Britain and France being the principal buyers.

Imports of pork also reached their peak figure in 1925: in that year the total was 844,404 quintals. In 1928 the total figure had fallen to 207,234 quintals, but later became re-established at higher levels. The chief item under this head was fresh pork, imported mainly from Denmark, the Netherlands, Sweden and occasionally from the United States. In 1935 there were considerable changes in the sources of supply. The following statement shows the imports of fresh pork in thousands of quintals.

After fresh pork, the next largest import under this head is that of fat pork. Some considerable shifting of sources of supply is also noticeable here

	Average 1925-29	1930	1931	1932	1933	1934	1935
Denmark	74.7	104.9	142.6	121.5	95.2	74.8	55.4
Yugoslavia	4.9	—	—	—	—	—	13.2
Netherlands	119.4	27.6	27.7	22.4	14.3	12.4	4.9
Poland	46.6	—	—	—	—	—	11.5
Romania	3.8	—	—	—	—	—	11.8
Sweden	6.9	11.7	14.3	10.1	10.5	10.9	9.0
Hungary	8.2	—	—	—	—	—	100.7
United States	2.4	0.9	3.8	6.6	18.8	11.0	2.1
Other Countries	79.7	9.3	13.9	16.8	19.2	9.8	6.2
Total	346.6	154.4	202.3	177.5	158.0	118.9	214.8

during recent years. The following is a statement of the fat pork imports in thousands of quintals per country:—

	Average 1925-29	1930	1931	1932	1933	1934	1935
Netherlands	29.0	51.9	128.6	191.8	112.8	118.0	79.3
Hungary	0.8	0.9	1.2	—	3.2	16.0	17.6
United States	30.0	20.7	7.9	1.9	7.5	9.6	0.2
Spain	1.6	5.9	7.0	6.0	3.6	2.9	4.5
Denmark	—	—	2.4	2.0	1.5	1.3	3.0
Other Countries	8.2	0.9	2.1	1.0	1.0	0.6	0.6
Total	69.6	80.2	149.1	202.7	129.6	148.3	105.3

The imports, up to 1931 at times very high, of edible offals of pork, came nearly exclusively from the United States (in 1929 out of a total of 37,632 quintals, 34,058). In recent years this item has not been registered.

Export of pork, which was especially large in 1930 and 1931, consisted mainly of fresh pork or simple preparations and was chiefly directed towards the French and British markets.

External trade in mutton is of very small importance; the volume of imports, consisting of frozen and chilled meat, was fairly considerable up to 1931 only.

An enquiry into the *sources of all meat imports* into Germany from 1924 onwards reveals considerable shifting, due in part to the varying proportions in the total importation of the different types of meat coming as they do from different countries; the changes are also the consequence of the character of the commercial relations of Germany with the various exporting countries. As long as the importation of frozen and chilled meat remained free or limited only to a small degree, the countries sending the largest quantities of meat to Germany were those overseas. Thus, from 1925 to 1929, Argentina sent 49.5 per cent., Uruguay 2.3, Brazil 1.91, the United States 4.62, and Australia 3.6 per cent. of all the meat imported by Germany. During the same period only 15.7 and 9.7 per cent. came respectively from the Netherlands and Denmark. When the imports of frozen and chilled meat ceased, the share of the European

countries in German imports increased, although the imports themselves diminished. In 1931, the chief supplying countries were: Denmark (45.23 per cent.), the Netherlands (36.93 per cent.), Lithuania (5.23 per cent.), the United States (5.1 per cent.) and Sweden (3.17 per cent.). While the respective shares of these countries in the constantly diminishing imports of meat into Germany varied from year to year, it was not till 1935 that fundamental changes took place in their relative position. As a result of the trade and payments agreements concluded with Germany, Hungary, which in 1931 supplied only 0.27 per cent. of the total meat imports into Germany, only 1 per cent. in 1933 and 5.39 per cent. in 1934, in 1935 took the first place with 31.61 per cent., the share of the Netherlands being 27.68 per cent. and that of Denmark 22.5 per cent. Imports from the United States and from Lithuania fell in that year to very small quantities, while Yugoslavia increased its proportion of the total imports to 3.5 per cent. and Poland to 3.1 per cent. Sweden practically maintained its position with 2.5 per cent. of the total imports.

IV. — DEVELOPMENT OF MEAT CONSUMPTION ACCORDING TO THE DIFFERENT KINDS OF MEAT: RELATIVE IMPORTANCE OF NATIONAL AND FOREIGN SUPPLIES.

In Table IV will be found information as to the development of meat consumption, the importance of the different kinds of meat, of the national production and the foreign sources of supply, and on the consumption of meat per head of population. The consumption figures include the meat and also the fat yielded by animals slaughtered in the country (hence also by imported animals slaughtered in Germany); on the other hand, the figures include the excess imports of meat, but not the excess imports of the corresponding fats. The quantities of meat yielded by the animals slaughtered in the country are calculated on the basis of dead weights: on the other hand there are not included in these weights the edible internal organs, the fat surrounding these, nor meat which cannot be utilised.

From the table it will be seen that about 60 per cent. of the meat consumed was pork. Beef and veal take the second place; other meats are of small importance. According to the estimates of the *Institut für Konjunkturforschung*, the consumption of poultry meat has been in recent years in round figures 1,000,000 quintals, and of game 220,000 quintals. Of these meats, 30 and 15 per cent. respectively have been imported.

It appears further from the table that in 1925 the largest excess import of meat was registered. This volume remained at about the same level up to 1928; from 1928, it declined, so that in 1931 it was no more than the ninth part of what it had been in 1925. The question naturally suggests itself: what are the effects of this fact on the course of meat consumption?

The marked decline in imports after 1927 had no effect in decreasing the total meat consumption. The national production was not only adequate to balance the drop in imports, but actually facilitated an increase in the total consumption of meat. Any shortage in a certain kind of meat was compensated, as the table shows, by a larger quantity of another kind.

TABLE IV. — *Consumption of Meat in Germany.*

Year	Beef	Veal	Pork	Mutton	Goat's flesh	Total (2)
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I. — CONSUMPTION ACCORDING TO KINDS OF MEAT

(in thousands of quintals and in %)

1913 (1) 1000 qm	8,389	1,508	18,565	537	176	29,530
en %	28.41	5.10	62.87	1.82	0.60	100 —
1925 1000 qm	9,034	1,759	16,204	569	126	28,037
en %	32.22	6.27	57.79	2.03	0.45	100 —
1926 1000 qm	9,078	1,811	16,624	536	129	28,546
en %	31.80	6.34	58.23	1.88	0.45	100 —
1927 1000 qm	9,176	1,777	19,737	447	123	31,593
en %	29.04	5.62	62.47	1.41	0.39	100 —
1928 1000 qm	9,622	1,970	21,092	454	130	33,606
en %	28.63	5.86	62.76	1.35	0.39	100 —
1929 1000 qm	10,423	2,025	19,585	449	125	33,005
en %	31.58	6.13	59.34	1.36	0.37	100 —
1930 1000 qm	9,395	1,897	20,164	459	117	32,406
en %	28.99	5.85	62.22	1.42	0.36	100 —
1931 1000 qm	8,715	1,892	21,492	431	110	32,940
en %	26.45	5.74	65.24	1.31	0.33	100 —
1932 1000 qm	8,917	1,960	20,090	401	103	31,725
en %	28.11	6.17	63.32	1.26	0.32	100 —
1933 1000 qm	8,766	1,901	20,721	428	101	32,193
en %	27.23	5.90	64.36	1.33	0.31	100 —
1934 (3) 1000 qm	9,905	2,127	22,895	383	106	35,704
en %	27.74	5.96	64.12	1.07	0.30	100 —

Including: (A) *National production.*

1925	7,100	1,753	15,323	595	126	25,232
1926	7,181	1,801	15,932	516	129	25,927
1927	6,960	1,769	19,320	424	123	28,928
1928	7,899	1,957	20,884	416	130	31,624
1929	8,946	2,014	19,220	419	125	31,122
1930	8,549	1,891	20,011	439	117	31,381
1931	8,588	1,890	21,289	447	110	32,624
1932	8,736	1,961	19,740	405	103	31,199
1933	8,666	1,901	20,450	427	101	31,821
1934 (3)	9,688	2,127	22,619	382	106	35,210

(B) *Excess imports.*

1925	1,934	6	881	—	26	2,795
1926	1,897	10	692	—	20	2,619
1927	2,216	9	417	—	23	2,665
1928	1,723	13	208	—	38	1,982
1929	1,477	11	365	—	30	1,883
1930	846	6	153	—	20	1,025
1931	127	2	203	—	16	316
1932	181	—	350	—	4	526
1933	100	—	271	—	1	372
1934 (3)	217	0	276	—	1	494

TABLE IV (Continued). — *Consumption of Meat in Germany.*

Year	Beef	Veal	Pork	Mutton	Goat's flesh	Total (2)
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2. — NATIONAL PRODUCTION IN PERCENTAGE
OF THE TOTAL CONSUMPTION

1925	79	100	95	105	100	90
1926	79	99	96	96	100	91
1927	76	99	98	95	100	92
1928	82	99	99	92	100	94
1929	86	99	98	93	100	94
1930	91	100	99	96	100	97
1931	99	100	99	104	100	99
1932	98	100	98	101	100	98
1933	99	100	99	100	100	99
1934 (3)	98	100	99	100	100	99

3. — PER CAPITA CONSUMPTION IN KG.

1913 (1)	14.06	2.53	31.11	0.90	0.30	49.49
1925	14.48	2.82	28.59	0.92	0.20	44.94
1926	14.44	2.88	26.44	0.86	0.21	45.41
1927	14.50	2.81	31.21	0.71	0.20	49.95
1928	15.13	3.10	33.15	0.71	0.20	52.82
1929	16.30	3.16	30.62	0.70	0.20	51.60
1930	14.61	2.95	31.36	0.72	0.18	50.40
1931	13.63	2.94	32.20	0.66	0.17	51.08
1932	13.88	3.01	30.87	0.62	0.16	48.94
1933	13.46	2.92	31.63	0.66	0.15	49.24
1934 (3)	15.12	3.25	34.94	0.59	0.16	51.50

(1) Present territory without the Saar — (2) Including horse flesh. — (3) Provisional figures.

SOURCES: (1) v. d. DECKEN, Deutschlands Versorgung mit landwirtschaftlichen Erzeugnissen. Berichte über Landwirtschaft, Sonderheft 115, Berlin 1935. — (2) Konjunkturstatistisches Handbuch 1936. Berlin 1935.

The largest consumption of meat was in 1934, but all the meat resulting from the slaughterings of 1934 was not consumed directly: some part was transformed into neutral lard, to be used for the manufacture of margarine or for preserved meats. Thus, taking the figures supplied by the Oils and Fats Office, it is seen that from 1 July 1933 to October 1934 about 440,000 quintals of neutral lard have been used for the manufacture of margarine. In addition according to the figures supplied by the Office for Live Stock and Live Stock Products, from April 1934 to April 1935 there has been tinned the meat from about 89,000 head of cattle of German origin and from 64,000 head of cattle of foreign origin, and from 1 October 1934 to the month of April 1935 the lean meat of about 150,000 fat pigs. This tinned meat has been distributed for sale from May 1935 onwards.

If the production of national meat has more than compensated for the decline in imports, the increase of this production has not however been large

enough to maintain at the same level in view of the increase in population the per capita consumption. Per head of population the consumption at first after the war increased from year to year; it rose from 44.49 kg. in 1925 to 52.82 in 1928. In the years of the crisis, the consumption dropped by a little only. This is connected with the character of the German meat supply which is secured almost entirely by national production. Now this production tended to increase up to 1934, and as live stock which is ready for slaughter is kept longer only at the risk of losses, and accordingly has to be placed on sale, prices have had to be adjusted to the weakening purchasing power. In fact the weakening in purchasing power forces down the prices. Also, according to the estimates of the *Institut für Konjunkturforschung* the proceeds realised by the German farmers by the sale of their pigs, cattle, calves and sheep fell from 4,094,000.00 RM in 1929-30 to 2,058,000.00 in 1932-33, although the volume of sales remained very nearly the same. Prices paid to producers have thus been reduced by about 50 per cent.

In 1933 the consumption of meat again rose, following the improvement in the unemployment figures and in the returns of income. A larger increase occurred in 1934, so that in this year the highest meat consumption figure was reached for the period since the war. In absolute figures the meat consumption per capita in 1934 was considerably above that of the pre-war period. On the basis of adult consumption the consumption in 1934 which was 74.56 kg. was only just what it had been in 1913 viz., 74.55 kg. It should not however be forgotten that the entire production of meat in 1934 was not, as already pointed out, utilised for consumption. The difference is not however large; it is reckoned that the actual per capita consumption has been 53.19 kg. in place of 54.5 kg. The increase of consumption was at first also maintained in 1935, and in the first half of the year it stood above the consumption of the same period in 1934. The second half year of 1935 has however been characterised by the difficulty of fully meeting requirements.

The causes of the shortage in the meat supply were several: in the first place the increase in the consumption of meat due to the drop in unemployment and the increase in returns of income since 1933; in the second place, the reduction in the meat production after two and in certain regions three drought years with forage shortage. The poor forage crop of 1934 resulted in a reduction in the head of live stock, which was accentuated in 1935, owing to the fact that in this year too the forage crop fell below the average. At the end of August the supply of pork began to shrink: this was the more disturbing, because at the same time supplies were short on the fats market as a whole. As on account of the difficulties on the foreign exchange market, this deficit could not be completely balanced by an increase in imports of meat or of forage, various measures were taken, with the object of ensuring a sound distribution of the available meat supplies and the difficulties were in this way overcome. Thus, at the beginning of November, home slaughterings in the country were allowed only to the previous extent, the trade slaughterings of pigs were limited, and the killing of pigs or cattle not ready for the butcher was prohibited. By supplementary commercial agreements, the imports of

meat and of slaughter animals were increased, while at the same time prohibiting export of bacon and animal fats. By establishing prices relatively favourable for heavy weight pigs, an increase in the production of meat was anticipated; this was soon achieved. On the twelve most important pig markets of the Reich, the proportion of the heavy classes of pigs *a* and *b* (*a* = over 150 kg *b* = 120 to 150 kg) amounted in February 1936 to 47 per cent. as compared with 32.6 in February 1935, 32.6 in February 1934 and 19.7 only in February 1933. On the other hand the efforts made to increase the number of pigs have been successful. The intermediate census of 3 March 1936 has confirmed the result of the census taken in December: it shows that pig numbers have not only risen above the low level recently occupied but that they are rapidly increasing. At the beginning of March 1936, the numbers exceeded those of the month of March of the previous year by nearly 920,000 head. From 6 April, it has been possible to modify the measures restricting slaughtering.

When at the beginning of 1936 the difficulties met with on the pork market had been to some extent surmounted, the necessity became apparent for taking similar measures in respect of the slaughter cattle and beef market; in the previous years there had been heavy slaughterings, and from the shortage in pigs there had been large inroads on the cattle numbers.

Summarising, it may be said that, in the course of the last decade, German covered requirements, which have become larger from year to year, have been met within the country itself in a constantly increasing measure. A considerable proportion, although diminishing from year to year, of the national meat production depended however on imported feeding stuffs. As before the war so also in the post war period no rapid increase of national production is made possible except by the use of imported fodders, especially maize, barley and oilcake. The demand for these latter, it is true, is mainly with the object of increasing milk production.

The following statement shows in thousands of quintals the excess of imports of stock feeds over exports, including in the figures the feedingstuffs obtained in the course of transforming imported cereals and oilseeds: (1)

The importation of feedingstuffs has thus greatly expanded precisely during the years of the reconstitution of live stock in Germany. If these imports are compared with the total quantity of the feedingstuffs given to the animals, the import figure may be considered very small, but on the other hand the full significance is not seen from the figures taken alone; the imports are to a great extent made up of concentrated feeds the use of which has by itself enabled a large number of farms to secure maximum yields in milk and meat.

During recent years, the imports of feedingstuffs have greatly diminished; the experience of 1935, however, made it very clear that such reduction was a partial possibility only as a consequence of very satisfactory fodder crops in preceding years. As regards meat production, it is evident that the difficulties of provisioning the population by means of the resources of national production

(1) v. d. DECKEN, *loc. cit.*

	Cake	Bran	Feed cereals (1)	Cereal waste products (2)	Feed pulses (3)	Meat and fish meals
1924	3,660	6,320	8,650	...	100	350
1925	9,690	5,150	16,680	1,120	140	520
1926	11,060	12,560	21,490	1,740	320	870
1927	14,800	12,220	37,920	2,870	230	1,260
1928	16,890	8,670	27,340	2,490	330	1,050
1929	17,680	8,440	17,600	1,860	380	1,400
1930	14,960	3,840	15,970	1,450	410	1,190
1931	18,610	2,340	13,600	2,520	430	890
1932	22,900	820	14,590	2,680	240	910
1933	20,450	(— 20)	3,020	1,420	270	1,160
1934	15,530	1,810	9,890	810	640	1,470
1935	11,730	...	...	...	...	...

- (1) Feed ryes, feed wheats, feed oats, feed barley, feed maize, millet and rice, carobs, bird seed.
 (2) Rice or barley waste for stock feed.
 (3) Feed beans, lupins and vetches.

are not involved in the question of increase of herds, but depend exclusively on the attention given to ensure abundant quantities of forage; fodders rich in albumens are more important in this respect than fodders rich in starch. To obtain from stock breeding sufficient quantities of animal products by means of fodder grown on the farm is thus one of the main objectives of the present policy of national production.

It is hoped to approach more nearly to this goal by a general increase of the production of the soil, and especially of the production of grass lands and pasture lands by increased care in cultivation and manuring, by improvements, by the extension of the cultivation of oilseeds, of lucerne, of clover, of sweet lupins and of intercalary crops, as well as by encouraging the construction of silos. The success which has attended the measures taken for the stimulation of production must be fairly considerable, as otherwise after two years drought and so marked a limitation of the fodder imports, the numbers of live stock would have declined in still higher proportions. The success of the serious efforts made in very varying directions for increasing the production of stock feeds rich in albumen will be in consequence a determining factor for the future extent of the supplementary requirements of Germany in meat, as also the nature of the commercial relations with the countries exporting live stock and meat will determine the origin of the imports.

H. BÖKER.

AGRICULTURAL PROTECTIONISM AND THE AGRICULTURAL SITUATION 1925-29

PART II. — DEVELOPMENTS IN WORLD AGRICULTURE IN THE YEARS PRECEDING THE DEPRESSION

(Continued).

IV. — INTERNATIONAL TRADE IN AGRICULTURAL PRODUCTS.

Up to this point we have considered the main tendencies at work during this period in production, in the monetary situation and in prices. These tendencies, it was shown, were not developing in a uniform manner in the different countries of the world. Certain forces were at work tending still to increase the export trade of those countries to whose agriculture the war had given great stimulus. Other forces were at work threatening a reversal of those tendencies. Some forces were due particularly to post-war circumstances, others to circumstances which were evident in pre-war times. As a consequence of these diverse movements, which, we have also seen, were not conducive to a stable world economic situation, the trade relations were likely to undergo important changes, some reflecting to a greater extent one tendency and others, to a greater extent, other tendencies. Thus, as is noted below, the growth in certain European countries of wheat production began, towards the end of our period, to affect their imports and to a certain extent the wheat exports of the overseas countries—though these countries were diversely affected. On the other hand, the maize trade was affected not by the growth of maize in Europe but by the recovery in certain countries of the production of the rivals of maize.

Again, imports of bacon and lamb shewed a tendency distinct from those of beef.

In the following, the movements in trade in cereals, meats and butter during 1925-1929 are described.

Trade in Wheat.

That the growth of production in the western and southern hemispheres was largely stimulated by the growth in export markets is most clear in the case of wheat. Comparing 1909 with 1925-1929 production and trade increased as shown in Table XIV (page 158).

Thus in each of the four countries the export trade increased in a substantial greater proportion than production. It can be seen too that the export market plays a very important role in determining price conditions, for in Canada the exports averaged over 70 per cent. of the crop in 1925-1929, in Australia and Argentine over 60 per cent. and in U. S. A. nearly 20 per cent. Though a certain proportion of the Argentine exports go to South American countries and a certain proportion of North American and Australian exports to Asiatic countries, the great bulk of the exports from all four countries goes normally to Europe. In 1925-1929, the net exports from the American continent and Australasia averaged

TABLE XIV. — *Increase of Production and Trade in Wheat.*

	Production			Exports (1)		
	Average 1909-1913 million quintals	Average 1925-1929 million quintals	% increase	Average 1909-1913 million quintals	Average 1925-1929 million quintals	% increase
Canada	53.6	117.2	118	24.5	82.7	238
U. S. A.	187.8	223.8	19	26.8	42.1	57
Australia	24.6	37.0	50	13.4	25.9	93
Argentina	40.0	66.1	65	25.9	44.2	72

(1) Net exports of wheat and wheat flour.

179.3 million quintals and the total net imports of the Asiatic countries averaged only 14.3 million quintals, so that roughly the average export of the four countries to Europe equalled some 165 million quintals, a figure slightly larger than the sum of the net imports into Europe (157 million quintals). Thus the dependence of overseas agriculture on Europe and European economic conditions can hardly be overemphasised. For Europe, these supplies from overseas were of equal importance, for the net import balance into Europe averaged over 40 per cent. of the total European production (average production 1925-1929, 368 million quintals). From these figures can be appreciated the tremendous obstacles to the splitting up of the world into "autarchic" units, and the immense loss which must be involved in any such attempt.

Though there were, as we have explained, tendencies making for the decline of the overseas exporters these tendencies did not begin to shew their effects until after 1929. The table below shews the development of the net trade of the four countries.

TABLE XV. — *Net Exports of Wheat and Flour 1925-1929.*

(million quintals).

	1925	1926	1927	1928	1929
U. S. A.	33.0	47.9	57.8	35.1	36.8
Canada	72.6	80.4	80.3	112.1	68.2
Argentina	31.8	22.2	44.5	55.2	68.0
Australia	32.3	20.1	28.4	21.7	27.0

Thus in 1929 the total net exports of these countries was above the average level during the period, though lower than in 1928 (directly due to the big drop in Canadian exports). But, if the tendency to decline as a whole had not begun to work, there were diverse tendencies as between the countries. Thus United

States exports declined in 1928 and 1929 as compared with 1927, and in fact, have never recovered since. On the other hand, the Argentine began an upward movement after the fall in 1926 and in 1929 had reached the level of Canada. In Canada, exports followed the fluctuations in production which increased up to 1928. Australian exports similarly fluctuated with harvests.

In Europe, the exporting countries as a whole increased their exports, the volume of which, though small in comparison with the exports from overseas, was sufficiently large to influence market conditions. The growth occurred, however, primarily in the cases of Hungary and Yugoslavia, exports from Romania falling off considerably since 1926. Thus in 1929 the exports from these three amounted to 14.2 million quintals as compared with 8.9 millions in 1925.

TABLE XVI. — *Net Exports (1) of certain European Exporters.*

(million quintals).

	1925	1926	1927	1928	1929
Hungary	4.6	6.0	5.2	5.5	8.3
Romania	1.7	4.4	3.0	—	0.2
Yugoslavia	2.6	1.8	0.8	1.5	5.7

(1) Wheat and flour.

Net imports into Europe increased from 120 to 157 million quintals, or an increase of approximately 30 per cent. as compared with before the war, but whereas these imports in the post-war period came almost entirely from the overseas countries, in pre-war years both Russia and Asia (principally India) had supplied large quantities. Russian exports in 1925-1929 however fell to an average of only 3.1 million quintals, whilst India exported during 1925-29 an average of only 1.4 as compared with 13.4 million quintals in 1909-1913. As a result the continent of Asia as a whole had become a net importer instead of a net exporter.

Imports into Europe reached their highest level in 1927 and then fell, the fall being principally due to the decline of imports into Germany, France and Italy.

TABLE XVII. — *Net Imports of the Principal Importing Countries.*

(million quintals).

	1925	1926	1927	1928	1929
Germany	18.6	19.5	25.6	21.8	17.8
Belgium	10.4	10.0	12.0	11.3	11.5
France	12.1	4.2	21.7	10.4	14.3
Great Britain	49.6	53.0	60.3	55.2	59.9
Holland	7.0	7.2	8.2	7.9	8.0
Italy	21.4	21.1	22.9	27.1	16.8

It will be seen that even so the level of imports into Italy and Germany was only a little lower than in 1925, in spite of the increases in production and tariff rates, whilst in France the imports in 1929 reached the second highest level of the period, higher than that of 1925. The "free trade" countries, Great Britain, Holland and Belgium each reached the maximum in 1927, but in each case the 1929 level was hardly lower than this. But the difference between the "free trade" and protectionist countries is only slight, and it may certainly be said that protectionism, though it undoubtedly had begun to have an influence during this period, was not the dominant factor influencing international trade.

The same general conclusion also holds with respect to the other cereals, the trade in which shewed important changes.

Trade in the Other Cereals.

The trade in the other cereals with which we are here concerned—rye, barley, oats and maize—differs in a number of respects from the trade in wheat. The volume of trade, though somewhat larger than before the war, nevertheless amounts only to a very small proportion of the total production. Again, rye is primarily a European and Russian product and a subject for trade principally in European countries, whilst oats, barley and maize are chiefly fodder crops, with certain economic laws of their own. The increase in the demand from Europe for fodders from the American continents came chiefly indirectly, in the shape of an increased demand for animal products.

The following figures indicate the importance of, and the changes in, inter-continental trade.

TABLE XVIII.:— *Inter-continental Trade in certain Cereals:*
Annual Average (a) 1909-1913 and (b) 1925-1929

(million quintals).

(+ = net import, — = net export)

		Rye	Barley	Oats	Maize
Europe	(a)	+ 5.0	+ 44.1	+ 19.7	+ 45.3
	(b)	+ 9.0	+ 22.0	+ 9.9	+ 63.9
Russia	(a)	— 5.3	— 37.0	— 10.7	— 7.5
	(b)	— 1.2	— 2.8	— 0.3	— 1.0
North America	(a)	— 0.2	— 2.9 (*)	— 2.1 (*)	— 5.6 (*)
	(b)	— 6.5	— 13.7 (*)	— 3.9 (*)	— 0.8 (*)
South America	(a)	—	— 0.4	— 6.4	— 29.3
	(b)	—	— 2.6	— 5.1	— 55.2

(*) Including Central America.

Thus the net imports into Europe of rye in both periods were very small, but the trade in the remaining three crops was rather larger than that of rye. But it will be seen that net imports into Europe declined in the cases of barley and oats, whilst a considerable increase in maize imports (primarily from South America, though South African exports rose from 1.0 to 4.1 million quintals) occurred, tending in part to compensate for the decline in European production. In each case, but particularly in the case of barley, the decline of Russian exports was important. It will be seen that North America and South America compensated this decline, the former by increased exports of barley and the latter by increased exports of maize.

Rye.

In Europe, the principal importers of rye are Germany, Austria and Czechoslovakia, and the countries of the Baltic and Scandinavia. Perhaps the most important change in the European trade situation was that of Germany, from a net exporter before the war to a net importer after, her average exports before the war amounting to 4.0 million quintals and her imports during 1925-1929 to 0.7 million quintals. But even during this period, her pre-war position was gradually being restored, and by 1928 she again began to have a net export surplus, and in 1929 this reached the pre-war level. The principal European exporters of rye during the period 1925-1929 were Poland, Hungary and Romania, whose net exports averaged .6, 1.4 and .27 million quintals respectively. The exports of each of these countries declined roughly from 1926, as was also the case with the overseas exporters. Poland alone, after actually having a net import surplus in 1927 and 1928, again exported in 1929. The following figures, of the exports from the main exporters, shew the tendency of the trade in rye to decline. Thus exports from North America declined in 1929 to one tenth of the 1927 level. The only country whose exports throughout the period moved always in a contrary direction was Argentina, whose exports increased regularly.

TABLE XIX. — *Net Exports of Rye.*
(million quintals).

	1925	1926	1927	1928	1929
Hungary	1.2	2.2	1.4	1.2	1.2
Poland	1.1	2.1	+ 1.2	+ 1.0	2.0
Romania	0.1	0.3	0.6	—	0.2
U. S. A.	7.3	3.0	9.1	3.6	0.9
Canada	1.4	1.6	2.5	2.5	0.4
Argentina	0.1	0.7	1.4	1.7	1.9

Barley.

The changes in the European trade in barley, both as compared with before the war and during the whole period 1925-1929, were striking. Germany and Britain were primarily responsible for the decline in European

imports, the imports into the former falling from a pre-war average of 30.8 million quintals to an average during 1925-1929 of 16.7 millions, and the latter from 10.8 to 6.8 million quintals. For both countries the period 1925-1929 was one first of increase and then of decrease. Thus imports into Germany rose from 9.2 million quintals in 1925 to 20.0 in 1927 and then began a fall from which they never recovered for many years (1). In 1929 however they had only fallen to 17.6 million quintals (in 1933 to 2.4). Imports into Great Britain fell similarly during this period from 8.2 millions in 1927 to 6.0 in 1929, and it was only in the subsequent year that their direction diverged from that of the German imports. (In 1933 imports into Britain equalled 8.1 million quintals). During this period, in this as in most other commodities, Britain had hardly begun to play her role of the "free trade shock absorber".

Exports from the European countries grew during this period and 1929 was for each of them the highest year. On the other hand Russian exports had slumped again after 1926 and the main overseas exporters had fallen in 1929 well below their 1927 level. The next table gives the net exports of barley from the main exporters. It will be seen that the exports from the four "old world" countries in 1929 exceeded the total from Canada, U. S. A. and Argentina.

TABLE XX. — *Net Exports of Barley.*

(million quintals).

	1925	1926	1927	1928	1929
Hungary	0.4	0.5	0.5	0.3	0.9
Poland	1.0	1.4	0.6	1.1	2.4
Romania	1.8	5.0	7.0	—	11.5
U. S. S. R.	4.8	7.2	0.6	—	1.6
Canada	7.3	7.6	7.0	8.0	3.7
U. S. A.	6.3	3.0	8.3	11.3	6.4
Argentina	0.6	1.7	3.0	2.3	2.5

Oats.

The decline in the trade in oats was primarily a result of the falling off in Russian exports. Exports however from Hungary and Romania also fell, from averages of 1.7 and 1.6 million quintals respectively before the war to averages of only 0.3 and 0.5 million quintals in 1925-1929. The former case can however to a large extent be explained through the loss of territory.

All the European importing countries consequently imported smaller quantities, the largest decreases being those of Britain, France and Germany, falling

(1) Until 1934

from 9.0 to 3.5, from 4.0 to 0.9 and from 1.4 to 0.3 million quintals respectively. The low levels were maintained throughout the years, and Germany in fact developed an export surplus in 1928 and 1929, of 1.6 and 3.9 million quintals respectively. The exports of the overseas countries consequently also fell in 1928 and 1929. Thus Canadian exports, which amounted to 6.1 million quintals in 1925, had fallen in 1929 to only 7 millions, whilst those from U. S. A. fell throughout the period from 4.3 millions in 1925 to 9 millions in 1929. Exports from the Argentine rose from 4.3 to 6.0 millions in 1927 but fell in 1929 again to 4.3 million quintals. Thus though the trade was on a small scale the changes are significant, and fit in with the general analysis in the preceding sections.

Maize.

The trade in maize was seen to be the largest, and is particularly important for the Argentine, which is the principal exporter, and which therefore was the principal overseas country to feel the effect of the tendencies in Europe as far as this commodity is concerned. Maize exports from the Argentine broadly rose up to 1927, when the level of 83.4 million quintals was reached. They then fell in 1929 to 50.5 million quintals. This large drop was greater than the fall in European net imports, which fell between the same years from 82.8 to 63.6 million quintals. The difference was chiefly made up by the growth in U. S. exports from 2.1 to 8.5 million quintals. The decline in these years in imports into Europe was not however due to the recovery of exports from European exporters, for the reverse actually happened, for exports from the largest European exporter, Romania, fell from 17.7 to 3.7 million quintals. With the exception of Italy and France, almost all European countries diminished their imports from 1927. The largest drop occurred in the cases of Germany, Great Britain, Denmark, Holland and Belgium as follows:

TABLE XXI. — *Net Imports of Maize 1927-1929.*

	1927	1928	1929
Germany.	21.0	12.8	6.7
Great Britain	20.6	16.0	16.9
Denmark	8.4	6.3	1.8
Holland	13.7	12.0	9.8
Belgium.	7.7	5.5	5.7

Net imports into Italy, between 1927 and 1929 increased from 4.1 to 7.7 million quintals and into France from 7.8 to 8.2 million quintals. It therefore is difficult to ascribe the European decline to protection. It should be therefore recalled that in Germany production both of barley and oats was higher in 1929 than in 1927, the production of oats having risen from 63.4 to 73.8 million quintals. Similar facts were true also of the "free trade" countries. Thus in Great Britain production of barley increased from 11.0 to 12.9 million quintals,

and of oats from 22.7 to 26.0 millions. In Denmark, the production of the former rose from 7.9 to 11.1 and of the latter from 8.8 to 10.3 million quintals. In Holland, production of oats increased, and in Belgium, of both barley and oats. Thus probably the chief reason for the decline in the European demand for maize from overseas was neither the increase in European production of maize nor the increase in tariff barriers but the increase in the production of rival crops.

Trade in Meats.

(a) Beef and Mutton.

The tendencies in the markets in meats consisted in part of reversals of movements brought about by the war, and in part of movements which reflect post-war changes in consumption and technique. The tendencies of the first kind are illustrated by the decline of overseas herds of cattle and the growth of European herds towards the pre-war numbers. These were movements which, it is important to realise, had been occurring since the immediate post-war period. Thus herds of cattle in U. S. A. stood at 58.7 million heads in 1913, 68.6 millions in 1919, 59.1 millions in 1925 and 58.0 millions in 1929. In Australia herds had risen in 1921 to 14.5 million heads as compared with 11.5 millions in 1913, but by 1929 had fallen to 11.2 millions. Again, in Argentina, herds had risen by nearly 50 per cent. after the war (from 25.9 millions in 1913 to 37.1 millions in 1922) but fell considerably afterwards, reaching the level of 32.2 millions in 1929. In Britain, France, Italy, Germany, Belgium and Denmark on the other hand herds had begun after 1920-21 to creep up to the pre-war level, and by 1929 the levels in most European countries exceeded the pre-war levels.

Tendencies of the second kind are revealed in the case of sheep, for the expansion came less as a result of war demands plus European decline (though this latter had been considerable), but more as a result of the growth in demand both for meat and wool, after the war. The numbers in the overseas countries grew in fact from the year 1921, a year in which flocks were still lower than before the war (1), and up to 1929 flocks were still growing.

The changes in the trade in beef shewed roughly the same tendencies as those in production. The following table indicates clearly the greater dependence of Europe on imported beef as compared with pre-war years, and the decline of that dependence in the years 1925 to 1929.

The first fact is instanced by the higher level of German, French, Belgian, Italian and British imports as compared with pre-war years, and the second the decline since roughly 1927 of the imports into all these countries (with the exception of Italy). It will be seen however that imports into these countries did not fall to an equal degree. German and Belgian imports are nearly

(1) Thus :	1913 millions	1921 millions
Australia	85.1	82.2
New Zealand	24.2	23.3

TABLE XXII. — *Trade in Beef 1909-1913 and 1925-1929.*

(000 quintals).

		1909-13	1925	1926	1927	1928	1929	1925-29
<i>Exporting countries</i>								
Argentina	(a)	168	3,725	4,307	4,667	3,831	3,580	4,022
	(b)	2,804	2,966	2,667	2,364	1,247	1,217	2,012
Brasil	(a)	—	523	55	298	589	717	435
	(b)	—	396	306	151	337	371	312
Uruguay	(a)	—	396	306	151	337	371	312
	(b)	217	946	960	930	403	398	728
Australia	(a)	590	1,303	649	598	859	772	836
	(b)	182	369	225	232	385	198	282
New Zealand	(a)	182	369	225	232	385	198	282
	(b)	—	99	154	61	77	114	101
South Africa	(a)	+	25	99	154	61	77	114
	(b)	—	99	154	61	77	114	101
<i>Importing countries</i>								
Germany	(a)	241	1,514	1,468	1,480	1,025	780	1,252
	(b)	3	60	81	2	15	23	26
Belgium	(a)	—	670	368	426	241	222	385
	(b)	—	923	631	482	49	88	436
France	(a)	1,900	—	4,176	5,273	4,850	4,718	4,786
	(b)	1,878	—	1,534	1,332	901	702	1,090
Great Britain	(a)	57	11	50	4	54	49	13
	(b)	—	1,050	608	542	499	600	660
Italy	(a)	—	118	182	185	167	175	165
	(b)	—	175	56	80	135	254	147
Japan	(*)	—	—	—	—	—	—	—
United States	(a)	—	175	56	80	135	254	147
	(b)	—	—	—	—	—	—	—

(*) Including fresh. (a) Chilled. (b) Frozen.

halved in 1929 as compared with 1927, French imports fell by over 80 per cent., while by contrast British imports fell by less than ten per cent. It can hardly be said that in this case the role of Britain was to absorb exports which had been driven away by trade barriers in the rest of the world. It may be added that French imports reached their lowest level in 1929 and subsequently rose, reaching in 1931 the, for France, relatively high level of 601 thousand quintals. A further important feature of the import situation reflecting to some degree the preference for higher qualities was the decline of British imports of frozen beef and the immense growth of chilled beef imports.

The export side of the table indicates a corresponding growth in exports as compared with the war and a tendency to decline during the period. It will be noted that the decline occurred both as regards chilled and frozen beef, and that the Argentine bore the brunt of the decline in frozen beef, exports of which declined by over half in these years. The heavy drop in Australian exports in 1926 should be noted and the fact that the 1925 level was not again reached indicated that general forces were at work influencing most exporters. Thus Uruguay and New Zealand were similarly affected.

The increase in the imports of mutton and lamb into Great Britain, the principal market, though not very great as compared with the growth in numbers,

continued however during 1925-1929. Before the war imports of frozen mutton and lamb averaged 2.5 million quintals. In 1925-29 they averaged 2.8' million quintals. Imports rose almost regularly from 2.7 million quintals in 1925 to 2.85 millions in 1929, unlike beef, not declining between 1927 and 1929. New Zealand and Argentine were chiefly responsible for the growth in the trade, for Australian exports only averaged 340 thousand quintals in 1925-29 as compared with 687 thousand in 1909-1913. Exports from New Zealand increased from 1.1 to 1.4 million quintals, and from Argentine, from 680 to 801 thousand quintals.

(b) *Pig Meats.*

The significance of the competition of bacon in the meat markets can be seen from the fact that imports into Great Britain rose from a pre-war average of 2.2 million quintals to an average during 1925-1929 of 3.9 millions, an increase of over 75 per cent. This process of increase, which also began before 1925 continued almost uninterruptedly, reaching the highest level for the period, 4.3 million quintals, in 1928. European competition made itself particularly felt during this period, against the principal overseas exporters, U. S. A. and Canada. Whereas exports from U. S. A. fell from 1.9 to 1.2 million quintals between 1925 and 1929, and from Canada, from 600 thousand to 100 thousand, exports from Denmark rose from 1.9 to 2.5 million quintals, and from Holland from 175 thousand to 525 thousand (1).

By contrast to the trade in bacon, trade in pork, though having increased to an equal extent, as compared with before the war, declined during this period. The contrast is further heightened by the fact that exports from U. S. A. and the smaller exporting countries of Argentine and New Zealand, declined less than the European exporters, chiefly Holland, Sweden and Poland. The decline occurred in both large importing countries Britain and Germany, imports of these two countries in 1925 equalling 679 and 702 thousand quintals respectively, and in 1929 only 396 and 170 thousand quintals respectively.

Trade in Butter.

Some of the trade movements described above constitute in large part reversals of movements brought about as a result of the war, particularly the trade in cereals and beef. This reversal was due largely to the growth of production in the European importing countries. Other movements however were primarily post-war developments which, not deriving their origin to the same extent from the war, did not tend to be reversed. Such were the movements in lamb and bacon. A further example of this latter type is provided by butter, the trade in which had expanded after the war and continued to expand. One feature

(1) It may be mentioned that one of the factors to which was attributed the decline of the U. S. A. exports was the regulation made by the British government prohibiting the use of borax or boric acid in curing. See on this "World Trade Barriers in relation to World Agriculture," pp. 176-177.

— of interest from the point of view of world trade relationships — differs in the case of butter from most of the other cases examined, namely that European countries are large exporters of butter, so that the competition faced by overseas exporters came not only from the production in the European importing countries but also from the European exporters. The expansion of both European and non-European exporters occurred together, for the former were neutral countries during the war — Denmark and Holland — and in them as in the latter countries production of goods supplied to the belligerents increased.

The increase in world trade was very large, both as compared with before the war, and during the period. World exports averaged 3.0 million quintals in 1909-1913 and 4.5 millions in 1925-1929. During the latter period the total rose by 25 per cent., from 4.0 in 1925 to 5.0 million quintals in 1929. The following table shews the changes in the exports balances of the large exporting countries. It will be seen that the two largest European exporters, Denmark and Holland, besides New Zealand, increased their exports considerably during the period. On the other hand, Australia and Argentine did not do as well.

TABLE XXIII. — *Net Exports of Butter.*

(thousand quintals).

	1925	1926	1927	1928	1929
Denmark	1,219	1,312	1,427	1,470	1,584
Holland	371	440	461	446	453
Sweden	90	151	184	175	249
Russia	251	268	324	326	254
Argentine	268	291	212	200	170
Australia	583	360	292	500	467
New Zealand	633	593	739	736	840

The great bulk of these exports go to Britain and Germany. Both of these markets in 1925 were substantially larger than in pre-war years, and both expanded considerably, the rate of expansion of the German market actually being the greater. Thus the imports into Germany increased from 0.96 million quintals in 1925 to 1.35 millions in 1929, or a rise of approximately 40 per cent. Imports into Britain increased between the same years from 2.8 to 3.2 million quintals, or a rise of approximately 14 per cent. The course of trade during the years is indicated in the following figures:

TABLE XXIV. — *Net Imports of Butter.*

(thousand quintals).

	1925	1926	1927	1928	1929
Great Britain	2,789	2,833	2,828	3,106	3,183
Germany	964	977	1,082	1,264	1,354

V. — CONCLUSION.

In the first part of our study we have described the attempts which were made during the period 1925-1929 with a view to returning to the so-called "normal" conditions of before the war. "Normality," in those days, was conceived as a state of economic and monetary equilibrium resting upon the basis of economic relationships such as existed before 1914. Pre-war criteria were applied to monetary problems as well as to the question of protection. Yet, the changes in economic and political conditions, due to the war and to its various consequences, were such that pre-war standards proved inapplicable, and the attempts at their enforcement frequently resulted in making the existing confusion worse founded.

In the second part of the present study an attempt was made to analyse the actual changes which either have taken place, or were taking place, in the conditions of agricultural production and trade in the course of the period 1925-29, and which worked at cross purposes with each other, making for conflicts and maladjustment. Our examination of the trends in the production and consumption of agricultural commodities, in monetary conditions and capital movements, in agricultural prices and in the evolution of world trade in agricultural products tended to show that, far from the hoped-for balance being established, the lack of balance in the economic situation of world agriculture was becoming increasingly pronounced.

As the depression resulting from the accentuation of these maladjustments deepened, the belief in the possibility of economic restoration on the basis of pre-war standards of "normality" tended to fade and to give place to attempts at intervention and control. The nature and significance of this change, as well as the evolution and effects of the various measures of intervention in the domain of agriculture, will form the subject matter of later studies.

A. EMANUEL.

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THE INTERNATIONAL ORGANISATION OF THE SUGAR MARKET

CONTENTS:— The two periods of the international regulation of the production and trade of sugar. The Brussels Convention of 1902. The international sugar market in the post-war period and international activity aiming at controlling the market up to 1931. The Chadbourne Agreement. The effects of this agreement during the five years of its existence. The International Sugar Committee.

On 1 September 1935 terminated the Chadbourne Agreement which was concluded on 9 May 1931 between the delegates of the industries concerned of the principal sugar exporting countries, namely Belgium, Cuba, Czechoslovakia, Germany, Hungary, Java, Poland and to which adhered also the delegates of Peru, in October 1931, and of Yugoslavia, in July 1932. This agreement, which aimed at the regulation of the production and export of the signatory countries, has not, up to the present, been replaced by another convention.

In order to understand correctly the tendencies which are at present in operation in regard to the conclusion of a new international agreement, it is useful not only to recall the principal provisions of the Chadbourne Agreement and of the activity of international organisation which proceeded and followed the conclusion of this important agreement, but also to indicate the features of the economic situation on which that activity was founded and the effects which that agreement has had on the international sugar market.

The international regulation of the sugar market may be divided according to two long periods. The first dates from 8 November 1864, the date of the signing of the Paris Convention, and goes up to 1 September 1920, on which date terminated the Brussels Convention which had been signed on 5 March 1902. The common characteristic of the agreements concluded in this period was that they were concluded between States—almost entirely European States—and that they aimed at combating the granting of direct and indirect bounties on the production and export of sugar.

The second period, which dates from 14 November 1927, the date of the signing of an agreement concluded in Paris, up to 1 September 1935, the date of the termination of the Chadbourne Agreement, is characterised by the conclusion of world agreements, of a private nature, which aimed principally at improving the conditions on the market by means of limiting the production and exportation of sugar.

As regards the first period, a series of agreements was signed, but only two were able to enter into force. Under the first of these, concluded in Paris, in

1864, between Great Britain, France, Belgium and the Netherlands, the signatory States had attempted for the first time to check the tendency towards the granting of indirect premiums on exportation (1).

These arose either from the system of taxation or from the system of granting drawbacks. In regard to the first, since the taxes were assessed either on the raw material or on the productive capacity of the factory, the manufacturer was encouraged to increase his production in order to reduce the average charge of the tax per unit of weight. On exporting a part of his production the manufacturer received as reimbursement from the amount paid in tax a fixed sum which was often higher than the average charge referred to. This additional profit constituted an indirect premium on exports. The same happened when on the export of the refined sugar, a sum was paid as a drawback higher than that paid when the raw sugar was imported. The Paris convention had as its aim the creation of a method for all the signatory countries tending to prevent the payment of the drawback or reimbursement of the taxes acting as a premium. But the method adopted did not for long give satisfaction (2).

None of the other conventions which were made before the Brussels Convention of 1902 came into operation, owing to their failure to secure ratification. The conventions that suffered this fate were the following: the convention signed at Brussels on 2 August 1875 by France, Belgium, Great Britain and the Netherlands; that signed at Paris on 8 March 1877 by the same countries; finally, the convention signed at London on 30 August 1888 by Great Britain, Germany, Austria-Hungary, Spain, Italy, Belgium, the Netherlands and Russia.

The other convention which came into force was that signed at Brussels on 5 March 1902. This important international agreement crowned the repeated efforts made to combat the granting of direct and indirect premiums on production and exportation. Exportation had favoured foreign consumers at the expense of the home consumer, but the industry did not receive a lasting benefit because all the exporting countries tended to compete with each other in the granting of premiums, so that only the industry in the countries offering the highest premiums was able to draw a real benefit from them; but even this depended upon the sugar being exported to a country which did not impose on the imported sugar an offsetting import duty which usually was based on the amount of the premium granted by the exporting country. The Brussels Convention sought to remove the damaging effects of these measures and was able to register a rather striking success by maintaining up to the beginning of the world war a wide influence on the development of the sugar industry and of the trade and consumption of sugar (3).

This agreement was concluded between Germany, Austria-Hungary, Belgium, Spain, France, Great Britain, Italy, the Netherlands, Sweden and Norway,

(1) MIKUSCH. *Geschichte der internationalen Zuckerkonventionen*. Berichte über Landwirtschaft. Berlin 1932, p. 16.

(2) PENNOCK. *La question du sucre en Europe depuis la guerre mondiale*. Paris 1935, p. 15.

(3) MIKUSCH. *Op. cit.*, p. 14.

who undertook to suppress and not to re-establish in the duration of the convention all the direct and indirect premiums in the production and exportation of sugar, namely, the direct subsidies on exports, the complete or partial exemption from taxation enjoyed with respect to a proportion of the quantity manufactured, the profits resulting from a higher production than allowed for, the benefit obtained from an excessive drawback, the advantages resulting from any surtax (that is to say the difference between the rate of the duties and taxes applicable to foreign sugars and those applicable to domestic sugar) of a higher rate than that fixed by the convention, namely exceeding 6 francs per quintal for refined sugar and sugar which may be classed with refined, and 5.50 francs for the other sugars. Sheltered by an excessively protective duty the sugar industry could increase the price to the national consumer and thanks to the profit realised in that way sell the surplus of production abroad, this constituting an indirect premium.

It is natural that the signatory States, holding the view that the purpose of the surtax was the protection of the domestic market, should have each reserved the right to propose an imposition of the surtax in the case in which large quantities of sugar from a contracting State should be sent to it. The imposition was to apply only to the sugar originating in that State. But the convention also established that this surtax, which was fixed at a maximum figure of one franc per quintal, could not be authorised except when the invasion of the market was the consequence of less favourable economic conditions and not the result of an artificially high price obtaining as a result of an understanding between producers.

In order to prevent fraud the convention provided for a strict supervision by the customs authorities of the manufacture of the sugar which was to be made under bonded warehouse conditions, namely before the payment of the duty.

Another provision of the convention offered to the contracting States a guarantee against the competition of sugar benefiting from premiums by engaging the signatories to impose a counterbalancing duty on the sugar coming from countries giving premiums.

Spain, Italy, and Sweden were relieved of these engagements so long as they should not be exporting sugar.

Spain did not ratify the convention. But against this other States later adhered to it, namely Luxemburg, Peru, Switzerland and later, Russia, which adhered on special conditions. On 28 August 1907 the convention was prolonged, as from 1 September 1908 for five years, with certain modifications regarding Great Britain which made its final adherence dependent upon its being free of the engagement under the convention to impose compensatory duties on the import of subsidised sugar. This attitude was due in great part to the protest of the factories using the sugar as raw material, against the rise in prices resulting from the convention.

On 19 December of the same year Russia joined in the convention, being the only important European beet-sugar producing country which had not up to then adhered to the convention as a result of the opposition of the other signatories to Russia keeping her own special fiscal system, the " Normiowka " which, by the

fixing of quotas limiting the competition of the manufacturers on the internal market, together with the fixing by the State of a high price, afforded a premium on export. Largely owing to the concession of the exceptional clause in favour of Great Britain the obstacles to accepting Russia as a party to the convention so long as she maintained the fiscal system, fell to the ground, and on 19 December 1907 Russia adhered with that reservation to the convention. At the same time she undertook not to allow the profit which the sugar producers enjoyed from the fixing of the price on the internal market to increase, and also to limit the quantity of sugar exports on which the sugar tax was repaid to one million metric tons divided over a period of six years from 1 September 1907 to 31 August 1913. The exports to Finland, Persia and other bordering Asiatic countries were exempt from this undertaking. During this period, supplementary arrangements authorised Russia to increase the quota established.

On 17 March 1912 the convention was again prolonged with certain amendments. The world war as well as denunciation from various sides prepared a premature end to the convention which occurred formally on 1 September 1920, though its positive effects had ceased long before that date.

The convention had tangible results not only in the struggle against premiums, which it succeeded in eliminating but also in the increase of consumption through the lowering of duties and in part through the limitation of taxes.

It should be added that there did not occur what up to that time the European sugar industries had feared, namely that the sugar beet industry would have hardly been able to meet, without premiums on export, the competition of the cane sugar industries which could work under more favourable economic conditions (1).

After the end of the Brussels convention in 1920 no new convention was made before 14 November 1927, the date of the signing by the delegates from the sugar industries of Germany, Cuba, Poland, and Czechoslovakia of the Paris convention which opened the second period of the international regulation of the sugar market.

Before describing this convention it is appropriate to remark upon the situation which had in the meantime arisen on the international sugar market. It may be asserted that on the eve of the war the reaching of equilibrium between the production of beet and cane sugar was expected. The war diminished the production of beet sugar in Europe considerably as a result both of the military operations spread over a wide cultivated area and of the general disorganisation of production and trade. The reduction of European production stimulated production elsewhere, above all in the countries which produced cane sugar. In 1919-20 approximately four-fifths of world sugar production was of that origin whilst European production was only at about one third of the prewar average. After the war a rapid recovery in European production occurred which was stimulated in general cases by renewed State protection. But at the same time the cane sugar industry continued to increase production. In 1923-24

(1) MIKUSCH. *Op. cit.*, pp. 26, 29 and 34.

world sugar production had passed the prewar level, and from then on showed a tendency to increase progressively without consumption following the same development (1).

It was especially in Cuba and Java, countries in which the production of cane sugar was greatest, that the necessity to solve the overproduction problem was imposed. Cuba being aware of this necessity had begun in 1925-26 to take measures to limit production of the product. But it soon became necessary to admit the ineffectiveness of these sacrifices without the collaboration of other countries. Indeed certain countries increased their production at the same time to such a degree that the quantity of sugar offered on the world market later increased. Cuba then began discussions with important European exporting countries with the aim of securing the adoption of a restrictive policy, sending to Europe a representative with wide powers, Colonel Tarafa.

In November 1927 (11-14) there was held in Paris a meeting of the representatives of the sugar industry of Cuba, Germany, Czechoslovakia and Poland who decided to exert all their efforts to remedy the disequilibrium between production and world consumption, not only undertaking restrictive measures but promising also to take the appropriate steps to secure the collaboration of other exporting countries.

The representative of the Cuban industry undertook to secure a reduction in the production of 1927-28 to 4 million tons and the representatives of the sugar industry of the other three countries undertook to take the necessary steps to bring about an increase in domestic consumption and to reduce in whatever measure possible the quantity of sugar for export and, for 1928-29, to regulate the cultivation of sugar for this purpose.

On 30 November 1927 took place a conference in Berlin at which, among other things, the Paris decisions were ratified. In the course of a new conference held on the 18th to 20th of January 1928, also at Berlin, the representatives of the sugar industries of three European countries named above came to an agreement on the distribution between them of the quantities of sugar to be exported.

But whether owing to the limited number of the participants in these agreements or to the impossibility of obtaining the adhesion of Java, or because of the reform of the British customs tariff in April 1928 these agreements broke down (2).

In May 1928 the Economic Consultative Committee of the League of Nations recommended to the Council of the League to invite the economic organisation of that institution to make a thorough study of all the factors and measures influencing the production, consumption and international trade in sugar, and at the same time it proposed that a report be made to the Council to enable it to judge whether concerted international action could facilitate the solution of the problems relating to sugar. The council charged the Economic Committee with the examining of the question. The latter, after having compiled an ample documentation,

(1) Rapport of the United Kingdom Sugar Industry Enquiry Committee. London, 1935, p. 9.

(2) MUKUSCH. *Op. cit.*, p. 45.

based on the material supplied by various national organisations, the Secretariat of the League of Nations and the International Institute of Agriculture, and having studied some special memoranda prepared by three eminent experts on the question (MM. Prinsen Geerligs, F. O. Licht and Gustav Mikusch) and consulted with experts in the manufacture and refining of sugar as well as specialists in sugar beet cultivation, presented a report to the Council containing among other things the various solutions contemplated for the remedying of the crisis on the sugar market. It is of interest briefly to glance at these remedies suggested.

The remedies for the situation studied by the Committee aimed either at restricting production or at stimulating demand. For though consumption may have increased very rapidly so that one might have expected a very favourable market for the product, the contrary was actually the case and in many regions the sugar industry was working at a loss, resulting from the persistent surplus of production due to improvements in the methods of cultivating sugar cane and to the fact that the beet sugar producing countries had made great efforts to maintain and even to develop their production, in spite of the superior natural advantages enjoyed by the producers of cane sugar.

There was consequently proposed in the committee an international agreement between all the important producers or between the producers in the exporting countries to stabilise production for some years. There was also proposed the conclusion of an international agreement between all the exporting countries and those which would possibly have export surpluses in the future with the aim of creating a concerted and rational sales policy. On the other hand concerted action was suggested to develop sales and consumption by means of active propaganda, especially in the eastern tropical countries. It was also thought to be opportune to recommend to the governments to examine the possibility of lowering excise duties without, however, reducing the revenues from this source. Finally the usefulness was considered of establishing a central office to be charged with the collection and propagation of information.

In its report the Committee did not make any pronouncement on the relative merits of the various proposals referring to measures of a purely private character. Nevertheless it emphasised the idea expressed by most of the experts that if, in existing circumstances, the conclusion of an agreement between States, based upon the principles of the Brussels Convention of 1902, could not remedy the crisis, in any case the difficulties had been aggravated by the measures taken in many countries to stimulate production of sugar without taking into account the repercussions which these uncoordinated measures would have on the international situation. In this regard the possibility was considered that concerted actions between producers were of such a nature as to render superfluous certain of the artificial measures by which the sugar industry benefited in several countries. The suggestion put forward in the Committee of the lowering of excise duties was adopted by the Committee (1).

(1) La situation mondiale du sucre. Rapport du Comité économique de la Société des Nations. Genève, 1929, p. 16.

Shortly afterwards, at the end of June 1929 the representatives of the sugar industries of Cuba, Germany, Czechoslovakia, Poland, Hungary and Belgium met at Brussels. From what may be gathered in the absence of an official statement it was decided to restrict exports for a period of 4 years to a base figure established on the occasion. But the resolution was not put into effect. It seems that this was chiefly due to the negative attitude adopted by Java, whether resulting from its favourable situation in relation to the far eastern markets or from the fact that it had the advantage of low costs of production. In fact the methods of intensive cultivation (1) which had been stimulated by the concentration of capital and labour on an extension of land under sugar cultivation additions to which had been limited, and based on the widespread application of scientific research, have resulted in Java becoming the most intensively cultivated country in the tropics which has the possibility of producing under particularly favourable cost conditions (2).

The failure of the efforts made by Cuba to render more sound the market (through restriction of domestic production and agreements with other countries) obliged that country in April 1930 to relinquish the economic control, which it had already interrupted in 1928. This produced a large increase in sales of Cuban sugar and consequently a fall in prices such that the other producers selling their product on the American market also suffered heavy losses. The serious repercussions not only on the situation of the sugar industry of the United States but also on that of the American banks which had invested large capital sums in the industry, encouraged the large American banks interested to take the initiative in an action aiming at improving the situation on the world sugar market. Mr. Thomas L. Chadbourne was charged with the organisation of this enterprise.

After the return to economic control was decreed in Cuba under which the unsold stocks of the 1929-30 harvest were to be handed over to the National Exporting Agency against payment of an amount determined and after it had been decided in the same country to limit exports for 5 years, to the United States as well as to other countries, Mr. Chadbourne proceeded to negotiations with the representatives of the sugar industry of Europe and Java.

Negotiations took place at Amsterdam from 29 November to 8 December 1930 between the representatives of the sugar industries of Cuba and Java which led to an arrangement by which both countries undertook to restrict their exports for five years. Old stocks were to be used up during the convention by an equal amount each year. On 9 December of the same year the representatives of the sugar industry of these two countries met at Brussels together with the representatives of Germany, Czechoslovakia, Poland, Hungary and Belgium. But it was not possible to arrive at an understanding with the German delegation which claimed a higher quota. In January 1931 another conference took place at Berlin, but the Javanese delegation was not present. In the course of this conference were finally decided upon the export quotas which the international convention

(1) MIKUSCH. *Op. cit.*, p. 50.

(2) ROBERTSON. *World Sugar Production and Consumption*. London, 1934, p. 37.

was to authorise. On this occasion satisfaction to the demands of the German sugar industry was given (1).

At last, on 9 May 1931, there was signed at Brussels, by the organisations of the sugar industries of Java, Germany, Czechoslovakia, Poland and Hungary, by the Institute for Sugar Stabilisation of Cuba and by all the sugar factories of Belgium, the important international convention known as the Chadbourne Agreement.

The principal purpose of this convention (to which adhered also Peru in October 1931 and Yugoslavia in June 1932) was the remedying of the set-back in world sugar prices which had fallen to a level below cost of production as a result of the great increase of production and the accumulation of large surplus stocks (2). Under this agreement exports were first of all restricted to defined quantities. In the case in which the annual exports of a country went below the quota allowed the difference was not to be added to the quotas for the following years nor affect these quantities in any way, given the fact that the quota fixed for each year was to be separate and independent of the quotas fixed for the others.

Some exceptions, however, were made to this general rule.

The agreement established that the annual quota which could be exported by each country should consist either in part or wholly of existing surplus stocks or of newly produced sugar, it being understood that the surplus stocks should in five years be completely eliminated in the countries, whether through consumption or through inclusion in the export quotas. Consequently the production of each signatory country was to be regulated in such a way that it, together with the annual proportion of surplus stocks to be disposed of, should equal the total amount of the internal consumption plus the export quota allotted to the country.

The case was also provided for in which the annual production was not sufficient to reach the annual quota established after providing for local consumption and after having taken into account the quantities which were to be taken from existing surplus stocks. In this case the country concerned could make up for the deficit by drawing on the surplus stocks, without this affecting the rights of the country regarding the export quotas fixed for the following years. In the case of a rise in sugar prices the possibility was foreseen of increasing the export quotas according to an established procedure, and a definite scale of increase. And this by reason of the fact that the signatories of the agreement had only in view the re-establishment of a normal price for sugar. They wanted to avoid that the scheme of limitation of production should encourage, through prices above the normal, a new increase of production.

The convention created a permanent body to represent the signatories under the name of the International Sugar Council with its seat at The Hague.

The functions of this organ were the following: (a) the supervision of the operation of the agreement; (b) to collect statistics and information on production,

(1) PENNOCK. *Op. cit.*, p. 11.

(2) Introduction to the Chadbourne Convention.

consumption, stocks and the requirements of the signatory countries and also of all other countries; (c) to study the increase or otherwise in the consumption of sugar and the reasons for the changes; (d) to study ways and means of increasing the consumption of sugar; (e) to recommend to the parties to the agreement suitable measures to improve, develop and control the production and consumption of sugar; (f) to publish at regular intervals carefully prepared statistics relating to the world sugar situation and to suggest to the parties to the agreement measures to be taken to adapt production to the needs of consumption and export, and with the purpose of improving the methods of selling and marketing; (g) to consider and discuss with the producers of the non-adhering countries measures to the common interest, and to come to agreement with such producers; (h) finally there were other duties concerning the appointment and dismissal not only of the Honorary President, the Chairman and Secretary but also of the staff whose task it was to put the work of the council into effect.

The convention established that the signatories were to be represented as follows: Cuba by 35 votes, Java by 20, Czechoslovakia by 8, Germany by 6, Poland by 6, Hungary by 3 and Belgium by 2 votes.

The parties to the agreement, desiring that legislative measures should be taken in the various countries relating to the restrictions concerned in the agreement undertook to exert their efforts in this direction.

We may give some figures relating to the most important provisions of the agreement referring to the export quotas. As regards Cuba, only the quantities exported to countries other than the United States were determined by quota. Exports to this latter country were not restricted by the convention, but Cuba was required to include in its own export quota the sugar exported or re-exported from the United States to the extent to which that quantity exceeded imports into the United States.

The export quota allotted to Cuba for countries other than the United States was fixed at 655,000 long tons for 1931, 805,000 tons for 1932, and 855,000 tons in 1933, 1934 and 1935. In the case of Java, annual exports of sugar were not to exceed 2,300,000 metric tons during the period 1 April 1931 31 March 1932, 2,400,000 metric tons in 1932-33, 2,500,000 metric tons in 1933-34, 2,600,000 metric tons in 1934 and 2,700,000 metric tons in 1935-36. The annual increase from 1 April 1932 was dependent upon the condition that if in any one of the four following years Java should accumulate extra stocks through not having been able to export her whole quota allotted for the particular year, she was then to take steps to adjust her production to those conditions, for the production of Java was not, owing to the annual increase in the allotted quota referred to, to lead to the further creating of surplus stocks.

The quota allotted to Germany was 500,000 metric tons for the year from 1 September 1930 to 31 August 1931, 350,000 metric tons for 1931-32 and 300,000 metric tons for the succeeding three years.

The quotas fixed for Poland, Hungary and Belgium for each of the five years from 1 September 1930 until the termination of the agreement were 308,912 metric tons for Poland, 84,100 metric tons for Hungary and 30,275 metric tons for Belgium.

In regard to Czechoslovakia the quota was fixed at 570,817 metric tons for the five years of the Convention from 1 October 1930.

In the convention the case was contemplated that Germany might not be able to export the quota allotted; the quantity lacking was to be divided between the other signatories, other than Java, up to the following maximum figures: 300,000 metric tons in the first year; 150,000 metric tons in the second and 100,000 metric tons in the subsequent years. These amounts were distributed in the following proportions: Cuba 575-750, Czechoslovakia 96-750, Poland 56-750, Hungary 17-750, Belgium 6-750.

The export quota for Peru, which entered the convention in October 1931, was fixed at 360,000 long tons for 1931 and 373,750 long tons for each of the four subsequent years. As regards Yugoslavia, which signed the convention in June 1932, a quota of 15,000 metric tons was allotted, but the country did not arrive at selling sugar abroad.

We may now give some notes on the market situation during the period covered by the Chadbourne Agreement.

During 1930-31, world production of sugar, for the first time after a series of years of continual increase, shewed a decline which was entirely due to the beet sugar producing countries. The decline occurred not only in the countries adhering to the Chadbourne Agreement (which reduced the area under cultivation by 21 per cent. and the production of beet sugar by 36 per cent.) but also in other European countries and in North America (which diminished their total area under beet by 12 per cent. and production of sugar by 19 per cent.). The decline was due to the difficulty in disposing of beet sugar in competition with cane sugar which was produced at much lower costs, and to the existence of large stocks from preceding years, which brought almost all countries to reduce the area under beet cultivation. The few countries to which this rule did not apply were, apart from the U. S. S. R. and Spain, deficit countries.

In regard to cane sugar, production, by contrast, increased, but in the importing countries seeking to reduce their imports (*c. g.*, India, Egypt and Japan) and some exporting countries which could send their sugar duty free to important markets (Puerto Rico and Philippines to the United States, Formosa to Japan). On the other hand, the countries which adhered to the convention reduced their production, Cuba considerably and Java less appreciably.

But though total production decreased, consumption also decreased to such an extent that stocks increased further and the general tendency of falling prices continued during 1931-32 (1).

In 1932-33 a further diminution in production occurred. This time the production decreased not only of beet sugar but also of cane sugar (in Java to a very great degree) though the sacrifices by Cuba and Java went to the benefit of other producing countries of sugar cane which, with the exceptions of Puerto Rico, the Dominican Republic, Brazil and Formosa, increased their production.

(1) "The Agricultural Situation in 1931-32." International Institute of Agriculture. Rome, 1933, p. 69.

World stocks, which had increased up to the previous season began, to fall during this new period, though consumption also declined during 1932-33.

Prices were maintained at more or less the same level during the year with a slight tendency to fall (1).

In 1933-34, after the reductions in world sugar production in 1931-32 and 1932-33, a new increase in production occurred. This increase was due principally to the extension of the cultivation of beet in several countries, particularly in Germany, Denmark, the United Kingdom, the Netherlands, Sweden, the U. S. S. R. and the United States.

In regard to cane sugar, whilst Java reduced production again very considerably, a further increase occurred not only in India and other countries as a whole, but in Cuba which had followed for four years a constant policy of reduction.

In spite of the increase of world production stocks at the end of 1933-34 were slightly lower than at the beginning. The reduction which began in 1932 when stocks had reached their highest level thus continued throughout this new period. This was due to the increase in consumption which having fallen continually from 1930-31 recovered appreciably in 1933-34.

Prices were greatly depressed during this season and reached their lowest point during the first half of 1934 (2).

During the year 1934-35 world sugar production increased as compared with 1933-34 (3).

Whilst beet sugar production increased relatively to the previous year the production of cane sugar by contrast diminished. To this set-back contributed Java, Puerto Rico, Philippines and Mauritius, more than offsetting the increases registered in other countries (4).

World stocks (making a calculation based on figures covering approximately 80 per cent. of the world total) up to 1 September 1935 declined, this decline being due to the non-European countries, whose stocks had been declining continually since 1932. The diminution during the year in question was particularly large in Java, as a consequence of the large decrease in the area cultivated under sugar cane, and in Cuba, following upon a considerable increase in exports. This decrease in stocks largely offset the increase in European stocks which since 1932 had been continually declining. This new tendency seems to be the principally attributed to Germany, Spain, Czechoslovakia, Italy, Austria, Poland, France and Belgium. In most cases it was due to the increase in beet sugar production.

In regard to consumption, by estimating the apparent consumption of the two kinds of sugar on the basis of the data relating to the movement of imports and

(1) "The Agricultural Situation in 1932-33," p. 77.

(2) "The World Agricultural Situation in 1933-34." International Institute of Agriculture, Rome, 1935, p. 80.

(3) International Yearbook of Agricultural Statistics, p. 215.

(4) *International Review of Agriculture*. International Institute of Agriculture, Rome, February 1935, p. 110.

Effects of the Chadbourne Agreement on the Signatory Countries, during the Five Years of its Existence.

Country	Germany	Belgium, Hungary and Poland	Czechoslovakia	Cuba	Java	Peru
Quotas (2)	<div> <div>500,000</div> <div>350,000</div> <div>200,000</div> <div>223,334</div> <div>223,334</div> </div>	<div> <div>30,275</div> <div>24,724</div> <div>30,275</div> <div>30,275</div> <div>31,070</div> </div>	<div> <div>570,817</div> <div>581,777</div> <div>570,817</div> <div>935,459</div> <div>588,461</div> </div>	<div> <div>655,000</div> <div>985,000</div> <div>993,546</div> <div>2,600,000</div> <div>930,459</div> </div>	<div> <div>2,300,000</div> <div>2,400,000</div> <div>2,500,000</div> <div>2,600,000</div> <div>2,700,000</div> </div>	<div> <div>360,000</div> <div>373,750</div> <div>373,750</div> <div>373,750</div> <div>373,750</div> </div>
Net Exports	<div> <div>414,375</div> <div>99,253</div> <div>— 7,870</div> <div>— 12,127</div> <div>— 17,933</div> </div>	<div> <div>36,511</div> <div>7,627</div> <div>2,218</div> <div>12,474</div> <div>17,724</div> </div>	<div> <div>556,012</div> <div>493,013</div> <div>272,791</div> <div>161,916</div> <div>216,338</div> </div>	<div> <div>640,193</div> <div>928,555</div> <div>1,011,499</div> <div>891,296</div> <div>(c) 900,000</div> </div>	<div> <div>1,542,942</div> <div>1,331,472</div> <div>1,109,890</div> <div>1,186,436</div> <div>1,000,000 (c)</div> </div>	<div> <div>356,168</div> <div>320,002</div> <div>360,763</div> <div>311,967</div> <div>315,000 (c)</div> </div>
Stocks	<div> <div>736,323</div> <div>740,072</div> <div>341,260</div> <div>253,788</div> <div>379,072</div> </div>	<div> <div>371,846</div> <div>244,759</div> <div>257,204</div> <div>178,457</div> <div>180,997</div> </div>	<div> <div>229,075</div> <div>143,346</div> <div>99,263</div> <div>49,833</div> <div>57,100</div> </div>	<div> <div>1,652,387</div> <div>1,500,057</div> <div>937,518</div> <div>612,760</div> <div>(d) 590,000</div> </div>	<div> <div>1,633,203</div> <div>2,533,366</div> <div>2,491,434</div> <div>1,610,848</div> <div>(d) 820,000</div> </div>	<div> <div>38,161</div> <div>28,100</div> <div>20,425</div> <div>15,034</div> <div>(d) 20,000</div> </div>
Production	<div> <div>2,547,471</div> <div>1,594,811</div> <div>1,088,445</div> <div>1,429,175</div> <div>1,683,024</div> </div>	<div> <div>1,290,762</div> <div>821,543</div> <div>782,056</div> <div>723,791</div> <div>831,917</div> </div>	<div> <div>1,115,425</div> <div>792,140</div> <div>616,835</div> <div>503,037</div> <div>621,495</div> </div>	<div> <div>3,123,918</div> <div>2,602,864</div> <div>1,995,079</div> <div>2,274,303</div> <div>2,537,385</div> </div>	<div> <div>2,848,277</div> <div>2,608,866</div> <div>1,401,327</div> <div>646,245</div> <div>(d) 520,000</div> </div>	<div> <div>402,383</div> <div>368,591</div> <div>413,417</div> <div>377,915</div> <div>(d) 390,000</div> </div>
Domestic consumption	<div> <div>1,656,934</div> <div>1,491,809</div> <div>1,495,127</div> <div>1,528,774</div> <div>1,575,555</div> </div>	<div> <div>716,055</div> <div>660,484</div> <div>659,081</div> <div>643,395</div> <div>671,036</div> </div>	<div> <div>390,484</div> <div>385,825</div> <div>389,656</div> <div>391,715</div> <div>399,546</div> </div>	<div> <div>150,000</div> <div>150,000</div> <div>150,000</div> <div>150,000</div> <div>(d) 150,000</div> </div>	<div> <div>360,061</div> <div>377,868</div> <div>305,184</div> <div>310,062</div> <div>(d) 310,000</div> </div>	<div> <div>59,054</div> <div>58,050</div> <div>60,329</div> <div>70,439</div> <div>(d) 70,000</div> </div>

(1) The figures in this table are taken from an article by Louis Marino Perez. — (2) The quotas and exports of Cuba and Peru are given in long tons. The quotas and exports of the other countries are given in metric tons. The quotas and exports of the European countries refer to raw value. Those of the non-European countries are given tel quel. In the figures for Cuba are included the exports of sugar to the United States to be refined there and re-exported. (3) Approximate figures. (4) In part estimated figures. (5) Estimated figures.

exports, of stocks at the end of the season and of production a further improvement may be noted both outside and in Europe.

As to prices the results did not confirm the optimistic expectations held in consequence of the sacrifices made according to the provisions of the Chadbourne Agreement (1).

On p. 182 is a fairly complete table relating to the production, consumption, export quotas, net exports and stocks in the cases of the signatories to the Chadbourne Agreement during the five years of its existence.

After this brief survey of the situation of the sugar market during the period of the Chadbourne Agreement, we may give some indications of the international activity which has aimed either at changing or replacing that agreement.

Firstly should be recalled the dispute between the two largest sugar exporting countries, Cuba and Java. This dispute, which broke out in 1931, was due to the fact that whereas Cuba had restricted her production in such manner that more than one half of the sugar cane had been left standing for the next year, Java had worked all the mature sugar cane, the economic conditions of the country compelling it to act in this way. Besides this the limitation of production was initiated on a modest scale and was only increased during the next year. The Cubans having also observed that the Javanese stocks were accumulating so that a large proportion of the quota allotted under the agreement could not be exported, whilst they themselves could export all their permitted quota, asked for an increase of their quota together with a decrease in that of Java.

The Javanese industry in contrary wise was opposed to any change, maintaining that the quotas fixed by the agreement could not be changed before its termination except, of course, in the cases provided for by the agreement itself.

The International Sugar Council which met for the first time at Paris in December 1931 considered this question at once and continued to deal with it in the course of the other sessions which were held successively at Brussels, Berlin, Paris and Ostende and again at Brussels. Finally at a meeting held at The Hague in December 1932 it was able to obtain a definite agreement. Cuba obtained for the year 1932 for exports to countries other than the United States a quota of 985,000 long tons (805,000, original quota plus 65,000 tons as Cuba's share of the deficit on the German export quota for 1930-31 and 115,000 metric tons for 1931-32). For 1933 Cuba obtained one million long tons comprising 855,000 tons fixed by the convention plus 35,000 metric tons representing the cession in Cuba's favour of the quantities allotted to European countries from that part of the German quota which Germany had not exported up to 1 September 1932, plus 23,346 long tons not exported up to 1 September 1933, plus 76,666 metric tons comprising Cuba's share in the quantity not exported by Germany up to 1 September 1933, plus 10,000 tons to bring the quota up to a round figure.

The European signatory countries completely and Cuba within the limits indicated renounced their right to export their share of the proportion of her quota that Germany could not export up to 1 September 1932 and 1933.

(1) *International Review of Agriculture*. International Institute of Agriculture, Rome, November 1935, p. 871.

Java, for 1934 and 1935, and Peru for 1934 only, conceded to Cuba their right, according to the convention, to increase their export quotas should world market prices reach a certain level. Germany undertook not to export between 1 September 1932 and 31 August 1933 more than 200,000 tons instead of 300,000 tons to which she was entitled.

This arrangement includes other supplementary provisions which we need not consider here. All the provisions of this agreement were dependent upon the condition that Cuba did not export in 1933 more than 2 million Spanish tons of sugar (1).

The question of the international sugar market was a subject discussed at the Monetary and Economic Conference at London in 1933. The International Sugar Council, with a view to making use of this international meeting had sent to the League of Nations a detailed memorandum on the sugar question asking at the same time that the question be included in the programme of the conference, as indeed, actually occurred.

Cuba submitted to the Conference a scheme for a world agreement by which the contracting parties should undertake, for a period of 10 years, not to set up new factories, not to increase the effective capacity of existing factories, not to rebuild factories which were wholly or partly out of working use, not to make any new subsidies direct or indirect to the production or exportation of sugar, and not to introduce any increase of import duties above 70 per cent. *ad valorem* during the period of the Chadbourne Agreement.

The competent Commission at the London Conference to which this scheme, as well as others, was submitted, made great efforts to obtain a result. But the results did not answer to the hopes which had been raised. The conclusion was the request to the Bureau of the Conference to maintain contact with the International Sugar Council as well as the countries concerned with the problem and to bring about, when it should judge it opportune, a new meeting to obtain the conclusion of a general agreement (2).

In December 1933 the International Sugar Council, after several preliminary discussions without concrete results, made a new representation to the Secretariat of the World Monetary and Economic Conference asking it to invite to a general meeting the representatives of the United Kingdom, the United States and the countries which had adhered to the Chadbourne Agreement, in order to discuss the possibilities of bringing about a world sugar conference. This meeting took place in London from the fifth to the tenth of March 1934 under the chairmanship of Lord Plymouth. All the countries indicated above, other than Germany who sent no representative, were represented.

At this meeting the delegation of Great Britain declared that that country was willing either to limit the production of sugar producers enjoying the aid of

(1) MUKUSCH. Das Internationale Zucherabkommen nach dem neuesten Stand seiner Entwicklung. Berichte über Landwirtschaft, p. 638.

(2) London Economic and Monetary Conference. Reports approved by the Conference 27 July 1933 and resolution of the Bureau and of the Executive Committee. London, 1933. Publication of the League of Nations, 1933-II, spec. 4-E.

subsidies made directly by the Treasury to a quantity based on existing production, leaving a margin for the increase in the return per acre of sugar beet cultivation; or to accept that the exports of British colonial dependencies should be stabilised for two years at the figure of 850,000 tons, whilst in the third, fourth, and fifth years the maximum exports would be at 878,000, 914,500 and 950,000 tons respectively.

The delegation of the United States declared that Congress was considering a scheme relating to the control of the sugar market, according to which the sales of sugar produced in the country and in certain colonial regions would be appreciably reduced. Special measures would allot to Cuba a defined quota on the United States market. The production of sugar in the Philippines was to be restricted and the surplus placed on the world market progressively diminished.

As to the countries adhering to the Chadbourne Agreement they declared that in the case in which other States adhered to an international scheme they would come to an agreement respecting the market left at their disposal. On the other hand the delegation of the Netherlands stated that it was necessary to restrict the measures of protection in order to act effectively, for the crisis was above all to be attributed to the growing protection enjoyed by the sugar industry and it could not be hoped to solve the sugar problem by seeking to divide among the exporting countries a market which was continually shrinking.

At the end of the meeting Lord Plymouth declared that he did not see the use of organising another meeting so long as the United States Congress did not adopt the scheme to which we have just referred, and the countries adhering to the Chadbourne Agreement were not in agreement.

The scheme of allotting quotas for the production of sugar in the United States with some modification, was voted by the House of Representatives and the Senate and signed in May 1934 by the President.

In regard to the relations between Java and the other parties to the Chadbourne Agreement the efforts made to secure an understanding continued (1).

The Chadbourne Agreement terminated at the date provided for, namely 1 September 1935, by virtue of a unanimous decision of the International Sugar Council, which, on August 5 and 6 in its second Brussels meeting, declared that it was impossible to prolong or renew the convention in its existing form. The Council added that this was due to the fact that though with respect to stocks a certain improvement had taken place in the previous years, it had been impossible to obtain an improvement in prices, in spite of the sacrifices made by the participating countries, owing notably to the increase in production in certain non-signatory countries. The improvement in prices had been a fundamental aim of the convention.

The Council also unanimously agreed to recommend to the English Government to convoke as soon as possible a world sugar conference to which should be invited the governments of the countries concerned with the sugar question, to examine measures to be taken to adjust the sugar market.

(1) Economic Committee of the League of Nations, E 889. Geneva, 18 April 1935.

By contrast there was no unanimity on the question of the prolongation of the existence of the Council and of its office as centre of co-ordination and information to prepare the basis of a world conference.

On 7 August 1935 met at Brussels the representatives of the sugar industry of Czechoslovakia, Poland, Hungary, Belgium, Peru and Germany. These countries decided to set up an International Sugar Committee whose object was to be the maintenance and improvement of the relations between the sugar industries of the various countries members of the committee and of those which would adhere to it, and especially to assist and facilitate the efforts to securing a world conference.

F. ARCOLEO.

THE ECONOMIC APECT OF THE WORLD PROBLEM OF THE PRODUCTION AND CONSUPTION OF COFFEE (1).

CONTENTS: I. — *Coffee in the World Economy*: The place of coffee in the world economy. Competing beverages. Distribution of world coffee production. Consumption of coffee in various countries. — II. *The Principal Producing Countries*: Brasil; Colombia; Venezuela; Guatemala; Salvador; Haiti; Mexico; Costa Rica; Nicaragua and Ecuador; Colonial Countries: Netherlands Indies; British Possessions and Protectorates; French Possessions; Portuguese Possessions; Belgian Congo; other countries. — III. *Conclusions*: The present situation and the policy to be followed.

I. — THE PLACE OF COFFEE IN THE WORLD ECONOMY

Coffee forms a relatively small proportion of the agricultural wealth of the world. But, if it is considered that the economic situation and prosperity of a number of countries such as Brazil and Colombia and of the countries of Central America depend upon its production, and that the crop is besides one of the foundations of the well-being of the colonies of some European nations we are justified in paying attention to this product, the consumption of which reaches extremely high and growing figures in Europe and America. From 17 million bags of 60 kgs. each before the war, consumption rose to 24 million bags of the same weight in 1933-34.

It is of great interest to note the world situation in the production and consumption of coffee in relation to the most common beverages such as tea, cocoa, wine and beer and to those which are called coffee substitutes but which are in part quite different beverages, such as chicory and, especially, malt coffee.

The spreading of coffee throughout the world meets above all with the competition of tea and cacao. In 1933 the production of these three products

(1) *Vide*: "Coffee in 1931 and 1932. Economic and Technical Aspects." International Institute of Agriculture, I. I. A. Rome, 1934. In the present article we deal mainly with the developments of the period since 1932.

amounted to 1,800,000,000 kgs. of coffee, 488,000,000 kgs. of tea and 610,000,000 kgs. of cacao of which the great bulk is not consumed as a beverage. The much greater production of coffee is evident. Yet, though these figures might be used to assert the pre-eminence of coffee over the other two products the situation is in fact different. We may compare the figures we have given above with those for the five year period 1909-1913.

	Average Production 1909-13	Production 1933
Cacao	236,000,000 kgs	610,000,000 kgs.
Tea	287,000,000 »	488,000,000 »
Coffee	1,000,000,000 »	1,800,000,000 »

In absolute figures the production of coffee is always highest, but the percentage increases in production are not in the favour of coffee. Cacao increased by no less than 160 per cent. in the twenty years from 1913 to 1933, tea by 70 per cent. whilst coffee increased only by 64 per cent. The greater rate of increase in the production of the former two products and the relative slowness in the case of coffee show clearly that the market tendencies are more favourable to cacao and tea, or, in other words, that they have better prospects than coffee. We describe below some of the causes bringing this state of affairs about.

The spread of coffee consumption is restricted not only by the two products mentioned, but meets also a serious obstacle in the so-called coffee substitutes (chicory and malt coffee). Those countries which produce chiefly coffee, particularly Brazil, see in these substitutes a serious rival to coffee. Two other beverages also compete with coffee, namely beer and wine, but the decrease in the consumption of the first according to the statistical data and the slow rate of increase of vine cultivation throughout the world makes it possible to assert that neither beer nor wine are rivals to be feared by coffee as hindering the extension of its consumption. The serious competitors of coffee are tea and cacao, which are gradually gaining ground upon it.

Before turning to the economic part of the present coffee problem of each of the producing countries we shew in three successive tables the distribution of the plant, the total production and world consumption of coffee, shewn by country and per head of population (1).

From the above table, three types of country can be distinguished. Firstly, those in which the growth of plantations has been considerable; secondly, those in which the growth has been only small; and thirdly, those in which the number of plantations has remained stationary. To the first type belong most clearly Brasil, Colombia and Netherlands Indies, in which countries together about 84 % of the total increase in coffee trees occurred. In Angola, Cuba, Costa Rica and Guatemala

(1) All these figures are official. Some are taken from the "Year Book of Agricultural Statistics" of the International Institute of Agriculture. Others, accompanied by remarks, are to be found in the excellent work of M. I. Regray: *Brésil, Le Café*, 1934. We have also drawn from W. H. UKKERS: *All about Coffee*, and the *Revista do Institut do Café de l'Estado de São Paulo*.

Number and Distribution of Coffee Trees.

Countries	Number of coffee trees, in thousands		Increase, in thousands
	1926	1933	
Brazil	2,040,530	3,075,695	1,035,165
Colombia	300,000	531,018	231,018
Netherlands Indies	129,000	280,000	151,000
Venezuela	133,000	202,000	69,000
Mexico	80,000	120,000	40,000
Guatemala	75,000	100,000	25,000
El Salvador	72,000	85,000	13,000
British East Africa	28,275	70,000	41,725
Ecuador	7,700	70,000	60,030
Haiti	63,600	64,000	400
Puerto Rico	54,600	55,000	400
Madagascar	20,000	40,000	20,000
Cuba	27,240	40,000	12,760
Costa Rica	32,000	37,000	5,000
India	25,000	35,000	10,000
Nicaragua	27,960	32,000	4,040
Angola	14,400	30,000	15,600
Abyssinia	20,000	25,000	5,000
Belgian Congo	10,000	23,656	13,656
Philippines	4,000	20,000	16,000
Jamaica	8,000	13,000	5,000
San Domingo	6,000	10,000	4,000
Honduras	4,400	6,000	1,600
Hawaii	4,000	4,000	—
British Guiana	820	3,000	2,181
Others	21,400	42,970	21,570
World total	<u>3,208,925</u>	<u>5,014,340</u>	<u>1,805,440</u>

the increase was relatively small, and the situation in Haiti, Puerto Rico, Hawaii may be regarded as stationary especially in the last, in which the plantations did not increase at all.

Certain consequences may be drawn from these figures. Brazil has increased her plantations by more than a thousand million trees, in round figures, and the other countries by 800 millions.

This considerable increase in hardly 8 years of 56 per cent. is chiefly due to the revalorisation policy pursued by Brasil. The increase in plantations may certainly be regarded as finished, for the stimulus to which it was due, the immense rise in prices up to 1929, has come to an end. Since most of the new plantations are now in full production Brazil has a surplus production which is congesting the market, and to regulate this she has been obliged in recent times to burn

large quantities. The other countries more or less succeed in disposing of their production, either on the domestic or on the foreign market.

There is, however, in the present situation of the coffee-producing countries an element of uncertainty, namely in that the colonial countries, which are, since they enjoy their metropolitan markets, in a better position than the independent countries as regards the sale of their products, may increase their coffee plantations. The danger for these other countries would then be evident. The cultivable zone for coffee is enormous in the tropical and subtropical regions. But the danger which such a development would bring, for an increase in crops would occasion a serious fall in prices, is made less real by a fact which makes that development unlikely, namely, the scarcity of labour in those regions.

Production. — We may now turn to production. In a study on the coffee question M. Alvaro de Oliveira estimates world production of this product at 32 million bags of 60 kgs. M. L. Regray, after having compared the official statistics furnished him by different producing countries, gives a slightly higher production figure, namely 32.7 million bags of 60 kgs., and the "Yearbook of Agricultural Statistics" of the International Institute of Agriculture gives a figure which, corrected for Brazil on the basis of information supplied by the Minister of Agriculture of that country, closely approximate to the above estimates. We may adopt the figures of M. Regray.

In view of their importance we give one table shewing production in Brazil, and another shewing average world production and its distribution between countries.

Production in Brazil.

States	Average Production in bags of 60 kgs.
São Paulo	16,000,000
Minas Geraes	4,250,000
Espirito Santo	1,450,000
Rio de Janeiro	1,075,000
Bahia	200,000
Paraná	500,000
Pernambuco	175,000
Ceará	75,000
Goyaz	75,000
Other	75,000
Total	23,875,000

São Paulo, it will be seen, contributes alone two thirds of the total production and almost half of world production. This State has 1,400 million coffee trees to which should be added 250 million young trees which shortly will add to the increase in the general production figure.

For the remaining countries the figures are as follows:—

Countries	Average Production in bags of 60 kgs.
Colombia	3,000,000
Netherlands Indies (1)	500,000
Venezuela	900,000
El Salvador	800,000
Guatemala	800,000
Haiti	550,000
British East Africa	500,000
Mexico	450,000
Costa Rica	350,000
Nicaragua	250,000
Somaliland	225,000
Angola	200,000
Madagascar	200,000
India	175,000
Ecuador	100,000
San Domingo	80,000
Other countries	380,000
Total	<u>10,460,000</u>

This total represents the actual production in bags of 60 kgs. (2). With the 23,875,000 bags which we have previously given for Brazil, a world production figure of 34,335,000 bags is arrived, at and, world consumption amounting to 25,500,000 bags, there remains therefore an annual surplus of 8,875,000 bags.

Since almost all these countries except Brazil place their whole production on the market, the surplus of approximately 8,835,000 bags comes from that country.

In regard to consumption of coffee we shall keep to the interesting facts gathered by M. Regray in the work quoted. According to him sales of coffee from 1927-28 to 1933-34 were as follows:

Years	Bags of coffee (3)
1927-28.	23,536,000
1928-29.	22,251,000
1929-30.	23,554,000
1930-31.	25,091,000
1931-32.	23,723,000
1932-33.	22,848,000
1933-34 (probably)	24,500,000

(1) Average of the last five years.

(2) Since the capacity of the package in which these countries generally export their products is reckoned in bags of 66 kgs, the figure given for the exports would be for these countries 8,825,000 bags.

(3) Bags of 60 kgs. in the case of Brazil and 66 kgs. in the cases of the other countries.

Taking a three year average we obtain the following figures:—

Year	Bags of coffee
1927-28.	22,179,000
1928-29.	22,362,000
1929-30.	23,113,000
1930-31.	23,632,000
1931-32.	24,121,000
1932-33.	23,887,000
1933-34 (approximately)	23,690,000

It may be remarked that the world economic crisis as well as the high price of coffee until 1929 have hindered the development of consumption.

Nevertheless it may not be denied that there is a natural tendency to an increase in the consumption of coffee, a tendency which emerges if figures are taken over a longer period just as it is clear that exceptionally favourable periods are followed by periods of stagnation. Thus an almost complete halt was seen during the period 1900-1914 when there was general economic equilibrium, and by contrast, a very definite increase in coffee consumption after the war, a period in which the number of coffee consumers had diminished as compared with before the war. According to M. Regray there are three main reasons for this increase. Firstly the seeming prosperity of the post war period and the general tendency towards a higher level of consumption; secondly the introduction of prohibition in the United States, which in large degree stimulated the consumption of coffee in that country; and thirdly the habit acquired in the belligerent countries of drinking coffee, a habit which persisted and helped to raise its consumption.

Once these causes disappeared it was to be foreseen that in the following years less favourable circumstances might intervene. The rise of prices until 1929 brought about by Brazil brought with it direct and indirect repercussions. The restriction in consumption as a corollary of any rise in prices, though slow, was a direct repercussion, whilst indirectly the rise in prices had an unfavourable influence. When Brazil lowered coffee prices, many European governments affected by the general economic crisis took advantage of this fall to impose extra duties on coffee. The consumers had the high prices required by Brazil but when this country lowered prices they were not, in fact, lowered to the consumer, for the fall was offset by the supplementary duties imposed. This fact, which kept up the high prices, prevented consumers from benefiting from the fall in the export price of the producing countries. Consumption continues to be hindered by high prices which prevent its normal increase or reduce the rate of increase which otherwise would obtain.

The consumption per capita is shewn in the following table:

Country	Population (thousands)	Consumption in kgs. per capita		
		1913	1929-30	1931-32
Denmark	3,565	5.10	7.15	8.18
Sweden	6,160	5.50	7.05	7.42
Norway	2,825	5.10	5.60	6.02
Belgium	9,650	4.95	5.35	5.86
United States	124,625	4.40	5.45	5.86
Netherlands	8,120	7.00	4.70	4.95
France	41,835	2.90	4.17	4.56
Switzerland	4,105	3.15	3.40	4.33
Finland	3,700	3.95	5.20	3.74
Malta	300	—	2.40	3.40
Germany	64,900	2.44	2.36	2.20
Argentina	11,800	1.70	1.73	1.71
Union of South Africa	8,200	1.89	1.54	1.55
Canada	10,500	1.00	0.95	1.33
Austria	6,750 (2)	1.10 (2)	1.08	1.26
Uruguay	1,940	1.62	1.31	1.24
Chile	4,400	1.37	1.17	1.23
Algeria	6,620	1.40	1.28	1.18
Italy	41,600	0.80	1.15	1.02
Czechoslovakia	14,850 (2)	1.10	0.89	1.02
Spain	24,200	0.75	1.07	1.00
Greece	6,650	0.54	0.83	0.81
Portugal	6,300	0.65	0.52	0.70
Tunis	2,250	—	0.72	0.69
Yugoslavia	14,000	0.40	0.78	0.57
Egypt	15,000	0.52	0.05	0.49
Great Britain	46,400	0.30	0.42	0.36
Paraguay	875	0.17	0.35	0.34
Turkey	14,300	0.60	0.41	0.34
Hungary	8,800 (2)	1.10	0.40	0.32
Poland	31,000	—	0.26	0.24
Romania	18,250	0.45	0.24	0.22
Australia	6,600	0.29	0.21	0.21
Bulgaria	6,100	—	0.12	0.16
Latvia	1,920	—	0.09	0.1
Lithuania	2,400	—	0.10	0.1
Irish Free State	2,450	—	0.10	0.07
Japan, Korea and Formosa . .	92,000	0.003	0.003	0.02
U. S. S. R.	162,000 (3)	0.16	0.01	0.004
China	475,000	0.005	0.0007	0.0006

(1) Two yearly average. — (2) Austria-Hungary. — (3) Russia.

The figures in the above table indicate the following facts; that climate appears to bear an influence on the consumption of coffee, a fact which is particularly relevant to northern countries; that the ease with which the consumer can obtain a native beverage such as tea, cocoa, wine, or beer, equally influences consumption, and that countries with large towns appear to have the highest consumption of this beverage.

Having completed the above and having described in broad outline the world coffee situation, we shall go on to deal with this problem, still from its economic aspect, in the different producing countries. All the statistics we have given shew a well defined order. The first place goes to Brazil, and then a good distance away comes Colombia, followed by Netherlands Indies and the group of South and Central American Republics which are large coffee producers, such as Venezuela, Salvador, Guatemala and others. Then come the countries which we may call small coffee producers.

II. — PRINCIPAL PRODUCING COUNTRIES.

After having outlined in the first part of this article the various features of the world coffee situation and having given some facts concerning the area in which it is produced, and production and consumption, we shall now turn to the situation in each of the producing countries.

BRAZIL.

The coffee plant, which was introduced into Brazil in the first half of the eighteenth century by Melho Palheta, a soldier in the Portuguese forces sent out on an expedition to this great Portuguese colony, began to spread widely. In 1928 there were exported 450,000 bags of a total value of a million pounds sterling. In 1850 2 ½ million bags were exported, whilst the three million figure was exceeded in 1878. This date coincides with that of the building of the first railways, which, bringing the coffee areas and ports into better communication, contributed to the present wealth in coffee in Brasil. In 1931-34 coffee formed on the average 75 per cent. of the total exports of the country.

It is in this preponderance given to coffee that the serious problem of the general economy of the country is to be found.

We have shown in the tables above the number of coffee trees grown in Brasil, the total production and the distribution of production between the States. We have also given figures of world consumption. The following table shews the quantity of world consumption of Brazilian coffee.

Consumption of Brazilian Coffee.

Years	Europe	United States	Total
1925-28 (average)	5,865,000	7,400,000	13,265,000
1929-32 " 	6,331,000	7,774,000	14,105,000
1933.	5,971,000	8,228,000	14,199,000
1934.	5,835,000	8,301,000	14,136,000
1935.	6,238,000	8,287,000	17,525,000

These figures indicate that on the average 64 per cent. of world consumption is of Brazilian coffee. The proportion of Brazilian production in the world total is considerably higher, but a large part of this production is destroyed.

Since, in the monograph on coffee published by the Institute, all the questions relating to the economic problem are dealt with, the present work will be confined to a brief description of the history of the problems from the beginning, bringing out the salient points and describing the measures taken to solve them, up to the situation at the present time.

From the time when, on the proclamation of the Republic, slave labour was abolished and substituted by free workers, every Brazilian government has sought to protect and encourage the cultivation of coffee, which grew to such a degree that by the beginning of the present century surpluses of production emerged. Indeed the size of the 1906-7 harvest, which reached a volume of 17 million bags, necessitated withdrawing from the market by State purchase some 7 million bags, in order to obtain equilibrium between production and consumption in that year, and, owing to the irregularity of the harvests (which is very characteristic of coffee growing in Brazil) in order to build up stocks for the years of short harvests. The constant preoccupation of the different governments was the maintenance of this equilibrium without which it was impossible to obtain remunerative prices and protect at the same time the interests of the producers and traders. In the years following 1906-7 the policy of buying up surpluses continued. Stocks increased in an alarming way, but the difficulties of the situation were easily overcome as a result of the great frosts of 1918 which destroyed the bulk of the harvest and allowed the accumulated stocks to be disposed of. It may be added that the situation was improved by this for the rise in coffee prices which followed was to the general advantage. The economic advantages obtained were shown on the one hand in the improvement of existing plantations and the setting up of new plantations, and on the other in the immediate production of new surplus quantities. But these were taken off the market and prices began to go up, rising from 6 to 20 milreis per 10 kgs.

At this time the government succeeded in disposing of the stocks to North American exporters at the price of 17 milreis per 10 kgs., a price which the latter were quite willing to pay owing to their belief that succeeding governments would keep to the policy of holding stocks.

But on the contrary, this policy was abandoned, speculation started, and a fall occurred down to the level of 8 milreis per 10 kgs. A reaction immediately occurred, and the government gave orders for the withdrawing of 4 ½ million bags of the 1921-22 harvest thus re-establishing confidence in the market. A rise in prices up to 20 milreis per 10 kgs. occurred. And then, with the policy of stock holding, the period of great prosperity began. Prices reached hitherto untouched levels. Coffee which before the war had fetched a price of 4 milreis per 10 kgs, was sold in 1924 at up to 50 milreis, and at the same time the rejected coffee, which before had never had a commercial value was sold at 30 milreis per 10 kgs. This was however but the valorisation produced by the holding of stocks the accumulation of which was to bring grave consequences in the following years.

This policy later caused a depression in prices but permitted for the moment the countries in competition with Brazil to benefit, the same countries being induced by easy profits to develop their plantations on a large scale.

Then came the period of borrowing. To prevent the planters and the trade from suffering from the fall in prices which began as a result of the huge level of stocks and the prospect of abundant harvests, the government negotiated a loan of 20 million pounds sterling to finance the holding of coffee stocks at the rate of 40 milreis per bag. But the loan was negotiated in terms of gold, which immediately had a repercussion in the fall in the exchange, and as a consequence of this an increase in the service on other loans previously obtained for other purposes and had been negotiated in terms of the paper currency. The situation thus created became untenable and the State Bank of São Paulo was obliged to suspend financing. This inevitably brought about a fall in prices. This was in 1929. In the following year, on the proclamation of the new Republic which resulted from the 1930 revolution, the state of the coffee problem became as we have described.

In spite of the government change the policy with regard to coffee remained the same, that is to say it was still sought by all possible means to maintain equilibrium between production and consumption. The method employed however to obtain this equilibrium was fundamentally different. The surpluses which congested the market were to disappear, but by destruction, so that the threat constituted by their existence would be removed.

Recent statistics (1) shew that up to 31 December 1935 more than 35,801,382 bags of 60 kgs. had been destroyed. This figure includes the destruction in each year since the beginning of the policy, as follows:

Year	Quantity destroyed Bags of 60 kgs.
1931.	2,825,784
1932.	9,329,633
1933.	13,910,105
1934.	8,042,698
1935.	1,693,162
Total . . .	35,801,382

Although the greater part of the surpluses was burnt, not all were eliminated in that way. One part was thrown into the sea and another was denatured and turned into fuel for locomotives. A small quantity was also denatured but was treated with small quantities of lime and actually used as fertiliser in the plantations.

After these figures, we carry on our description of the campaign towards solving the economic problem responsible for the surpluses of production.

(1) *Revista do Instituto do Café*, January 1936.

In the period since 1931, no government gave up the attempt to obtain equilibrium between production and consumption. By a decree of 7 December 1931 a National Coffee Council was created, to which were assigned as its chief activities the purchase and elimination of those quantities of coffee regarded as excessive. Its secondary functions lay in the improvement of the qualities produced in Brazil, the study of the effect of prices on production in competing countries, and propaganda in the consuming countries. This body, however, by a decree of 10 February 1933 was dissolved, whilst in its place was established a National Department for Coffee, a general body to be directed by three directors freely appointed by the Federal Government, and to which was added a consultative committee composed of a representative of the agricultural associations in each coffee-producing state and a representative of trade nominated by the ports of Rio, Santos and Victoria.

On being established the Department took charge of the winding up the National Coffee Council and took upon itself as far as possible the carrying out of decisions taken previously which were actually in suspension. Its principal task however was to face up to the record harvest indicated, which was threatening Brazilian coffee cultivation. In order to facilitate the working of economic measures a Decree of 17 March 1933 authorised the Bank of Brazil to cash certificates of purchase issued by the Department for Coffee, which also instituted on 13 April of the same year a bounty of 10 per cent. in money on exported coffee, whilst later the same Department granted liberty of trade with respect to certain classes of coffee from the 1933-34 harvest. On 26 May the National Department for Coffee took a step of extreme importance.

A decree of 22 November 1932 prohibited for three years any new planting of coffee in the whole of Brazil, even in the case of replacing plantations which had been abandoned. The decree maintained in force, up to December 1933, the period within which must be put into effect authorisations granted under a decree of April 1932, according to which plantations initiated after 1 July 1932 were taxed at the rate of one milreis per annum per tree, whilst new plantations set up in those States in which the number was less than fifty million trees, as was the case in the States of Paraná and Goyez, were exempted from the tax.

In handing over to the National Coffee Council the control of plantations, the decree of 22 November charged it also with coffee propaganda and declared that "the Council was authorised to determine annually a proportion of the production of each State to be acquired by the Council at a fixed price or simply to be held by the Council for a time that it considers necessary". It was precisely this provision which the Department took over and put into effect for the first time in its decision of 26 May 1933 in regard to the crop of 1933-34.

It was provided that the crops were to be divided into three parts, called "quotas"; that is, the quota to be given up; the quota to be withdrawn, (the eventual bringing of which on to the market would be subjected to certain restrictions); and lastly, the free quota. The first was to take up 40 per cent. of the crops and the latter two 30 per cent. each. Later was promulgated, to complete and

explain the decree by which the quotas were established, a whole series of provisions of which the chief was the fixing at 30 milreis of the amount to be received by the producer for each bag of 60 kgs. of the quota to be destroyed. To finance these purchases and its own working the Department used the proceeds of a Federal import tax which was at first fixed at 10 shillings per bag of 60 kgs and which later rose to 15 shillings and finally was fixed at 45 milreis.

Since its establishment the National Department for Coffee has sought to obtain equilibrium between production and consumption, in order to obtain remunerative prices, by means of its policy of quotas and the destruction of surpluses. It may be indeed said that it has achieved its purpose and though the prices of Brazilian coffee are still far from the exaggerated prices of the previous period, this coffee now obtains a price sufficiently high to maintain confidence in the market, securing for the producer at present an equitable return for his labour whilst awaiting a more prosperous situation, and making possible to trade to pursue its normal course.

M. D. B.

(To be continued).

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DUMONT RENÉ, ingénieur agronome: *Misère ou prospérité paysanne?* Edition Fuster, Paris, 1936. 186 pp.

[The study recently published by M. Dumont deals particularly with France. Its motive may be found in the fact that increasing production has ruined the producers who, in order to check the lowering of prices below a remunerative level, have been obliged to destroy their crops or reduce cultivation on their land, very often by the order and with the financial assistance of the Government. Two formulæ inscribed by the author under the title of his book indicate his main objectives: "France must nourish all her sons;" "Against poverty in the midst of plenty."

At a time when the great international institutions, the League of Nations, the International Labour Bureau and the International Institute of Agriculture, are endeavouring to examine the problem of alimentation under all its aspects, M. Dumont's interesting work has the merit of presenting in a small space an abundant documentation and of making some observations which command attention. The author shows conclusively that modern technique helps agriculture to produce more at a lesser expenditure of energy and in less time than before. Perhaps he does not take into full account the effects of climatic conditions. Through a careful handling of statistical data M. Dumont proves that France can produce nearly everything necessary for the alimentation of her people. But he also admits, in spite of the difficulty of proving this point, that a part of the French population is still either underfed or not properly fed. He adds that a larger consumption of fertilisers, could they be less expensive, and a more extensive use of machinery after the consolidation of holdings now divided into too many scattered plots, would permit one to look forward to an increase in the agricultural production: all of which is unquestionable. But this is only one item in the wide mass of studies which will have to be undertaken to show how the problem of the balance between production and consumption can be satisfactorily solved. This problem interests not one country alone, but the whole of mankind.

Some readers may feel that M. Dumont should have extended his survey further. In fact it is not enough to prove that a better distribution of the buying power will make a complete consumption of products possible and cause a general improvement in the standard of living. It is not enough to conclude with the promise that "We are going to create a world where the abundance of agricultural production will not entail either under-consumption by the labourers or poverty among the peasants." One would be pleased to know how M. Dumont thinks that so alluring a prediction may be fulfilled].

M. A. I.

LONGOBARDI CESARE: *Land Reclamation in Italy. Rural Revival in the Building of a Nation*. Translated from the Italian by Olivia Rossetti Agresti. London, P. S. King & Son, Ltd., 1936, pp. 243.

[The Italian Government's plan of integral land reclamation was prompted by the necessity of creating new districts of rural life and activity for an extremely dense and ever-increasing population confined within a narrow and largely mountainous territory. Its purpose is to increase the national income through a better exploitation of land and water resources and the adoption of forms of intensive cultivation capable of sustaining a larger number of labourers and attaching them to the land in a stable manner.

The plan includes a number of works, some of which are of public interest, while others are of private interest only: engineering works, works for the improvement of agriculture and forestry, such as drainage, irrigation, reafforestation, consolidation of holdings, rural buildings, road building, sanitation, etc.

This land reclamation scheme is "integral" inasmuch as it implies the drawing up and carrying out in accordance with organic plans of the whole of those works in the different regions of the country.

Those wishing to form a correct idea of this broad undertaking, of its motives, methods of realisation and results may advantageously consult Dr. C. Longobardi's volume, based on the most authoritative documentation including some of the speeches of the Head of the Italian Government which best emphasise the spirit and purposes of the new organisation of Italian agriculture.

After explaining the general idea of integral land reclamation and mentioning the legislative precedents of the reform, Dr. Longobardi reviews the main points of Fascist legislation in this matter, such as the law of 24 December 1928, No. 3,134, which made provision, in respect of a scheme of works extending over a period of 14 years, for an expenditure of 7,000 million liras, and the Royal Decree of 13 February 1933, No. 215, whereby not only all existing measures were united and co-ordinated, but another step was made in the juridical regulation of land reclamation by insuring it a more complete organic character. Special interest must be attached, in this part of Dr. Longobardi's book, to a table in which the different categories of land reclamation works are set out schematically, as well as to a table which indicates the contribution made by the Government to the cost of these works, and clearly shows the method of financing the whole scheme.

The volume contains numerous quotations from the works of Prof. A. Serpieri who was for several years Under-Secretary for Land Reclamation.

A chapter is devoted to the illustration of some typical examples of land reclamation; while the second fundamental problem of Italian rural economy, *i. e.* the "wheat campaign," is treated in all its details, and its most important elements are fully emphasised through highly significant statistical data].

G. C.

GARCIA ATANCE, J. and GUTIERREZ FERNANDEZ, A., Rural Engineers: Las Cátedras Ambulantes de Agricultura en Italia. Sáez Hermanos Editores. Madrid, 1936.

[This valuable study forms part of a series of monographs, now in course of publication, dealing with different aspects of Italian Agriculture. Through these monographs, those of two other Rural Engineers, MM. CUNI and CAVERO, and the works on the position of genetic studies in Italy, now being issued by M. NOCITO, another expert in the Agricultural Service, the Spanish reading public is enabled to acquire clear and fully detailed information on the agricultural situation in Italy at the present day.

The authors of the work, which is the subject of the present note, describe the "Itinerant Lectureships of Agriculture" in Italy as "a perfect model for all similar institutions, wherever they are to be found," a statement which is fully borne out by the contents of the volume.

The study covers all sides of the life and the multifarious activities of these "Itinerant Lectureships," of which the earlier history is fully described in a special and fully documented section, covering also the semi-official phase through which they passed, before they became merged in May 1935 in the Corporative System of the Fascist State as fully recognised organs of State.

This treatise is undoubtedly one of the most complete and objective on this characteristic feature in the national agricultural organisation, that has ever been published outside Italy].

M. DE B.

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(1) Previous list March 1936. To be continued September 1936.

(2) List of abbreviations: bihebdom. (biweekly); bimens. (twice monthly); bimestr. (every two months); déc. (every ten days); étr. (foreign price); f. (copy); hebdom. (weekly); int. (home price); irr. (irregular); mens. (monthly); n° (number); N. S. (new series); p. a. (per annum); q. (daily); sem. (half yearly); s. (series); trihebdom. (every three weeks); v. (volume); trim. (quarterly).

(3) Between brackets [/] are given translations and explanatory notes not appearing in the title of the review.

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SOCIAL INCOME OF FARMS IN THREE STATES OF THE UNITED STATES OF AMERICA (ILLINOIS, IOWA, INDIANA) IN 1932-33 (I)

In the April 1936 number of the *Monthly Bulletin of Agricultural Economics and Sociology* a study appeared of the variations occurring in the social income and its components from 1927-28 to 1931-32 in a large proportion of the European countries. Data are also available as to the social income in countries outside Europe, especially in the United States of America, and it has been felt that an article embodying these particulars would present interest.

The social income, as is well known, is one of the most important values which can be calculated by means of farm accountancy. It is obtained by deducting from the gross return the working expenses properly so called, *viz.*, the farm expenses apart from the labour costs and the taxes. That which remains is the recompense which the cultivator receives for the utilisation by him of labour and capital as necessitated in the farming of his land, and as well the recompense received by public institutions for their services rendered to the cultivator. A portion of this income, greater or less according to the size of the farm, remains in the hands of the cultivator; the name given to this share of the social income is the operator's return or the family farm income. It is moreover a matter of concern to the cultivator to ascertain the fraction of the social income which will be available for his own use without entrenchment on his own or family capital, leaving capital sums intact. Economists for some time past have proved that the smaller the farm the larger per unit of area is the social income. Relatively to the level reached by the social income, the family farm income will be larger, the smaller the area of the farm, because the more limited is the area farmed, the lower the labour costs will fall and the more considerable will be the wage claim for the labour of the operator and family. On very large farms, the operator and his family take no part at all in the work of the farm.

(I) "Hitherto the social income has scarcely ever served to measure the success and the profitability of single farms or of groups of farms. To-day, to measure the return of a farm use is rather made of the total income: the old units of measurement (net return, etc.) no longer suffice. But while it is more and more occupying a position in the front rank, that does not mean that the other units of measurement must disappear. Their utility depends on the posing of the question." (Dr. H. L. FENSCH, *Das volkswirtschaftliche Einkommen aus der Landwirtschaft*. Berlin 1936. Introduction, *passim*).

Nearly all the American farms the social income of which will be here under consideration belong to the category of large farms; it will thus not be surprising if it appears that the social income per hectare is low. With this will be compared the components of the social income of the large European farms, which most closely resemble those of the social income of the American farms, and the essential differences will be noted.

The amount of the social income depends in the first place on the size of the gross return, then on the extent of the working expenses: purchases of seed, fertilisers and stock feeds, repairs to buildings and machines, insurances, amortisation and ordinary expenses; or equally on the size of the net return, the taxes and labour costs, which comes to the same thing, since the net return is obtained by deducting from the gross return the farm expenses (working costs plus labour costs and taxes), while to add to the net return the labour costs and taxes is to eliminate them from the farm expenses (see Table I).

An examination may now be made of Table I and II taken together; the object being to discover the causes for the variations in amount per unit of area of the social income of groups of farms belonging to the systems of production and to regions indicated, and the reasons for the variation in the proportion of the social income which falls to the operator.

(A) FARMS OF ILLINOIS.

(a) *General farming (corn).*

The farms of the second group have a gross return of 28 gold francs per hectare lower than that of the farms of the first group: the difference is due to the irregularity in the return from maize growing. The farm expenses being the same for the two groups, the advantageous position of the net return and of the social income of the farms of the first group as compared with the second group is exclusively due to successful crop production. While, in the first case, the farmer is enabled to retain for his use more than half the social income, in the second case, not more than 18 per cent. is left for him.

(b) *Dairying.*

It is at once clear why the farms of the second group have an earning capacity inferior to that of the first group; these latter have had expenses for purchases of feed three times as high as the former. The farms of the third group, although their expenses are less, have a gross return which is 70 francs per hectare lower than that of the two first groups, and the social income sinks to a level appreciably lower. The farms of the fourth and fifth groups bought nearly as much feed as those of the second group, but have not had an equally satisfactory reward for effort; the milk production is low. Also, while the farms of the three first groups leave in the hands of the cultivator 44 to 52 per cent. of the social income, the farmer of De Kalb county retains little more than a fourth; farmers in the counties of Winnebago and Stephenson obtain a negative operator's return, which means that they must encroach on their own capital to meet the sum due to their creditors.

(c) *General farming (wheat and corn).*

Farms of the first, third, fifth and sixth groups secured about the same social income. Those belonging to the fifth and sixth groups are, so to speak, sister farms; the same height of gross return and of farm expenses, the same distribution of the components of the gross return and of farm expenses.

The gross return of the farms of the first group stands at the same level as that of those of the fifth and sixth, and as the farm expenses of the former are not so high their social income would be larger if this reduction in expenditure related rather to the working expenses than to the labour costs. As regards the gross return of the farms of the third group, it is smaller than that of the other groups mentioned above, but the farm expenses and the working expenses in particular are also lower.

The farms of the second and the fourth group have a social income closely approaching the average social income or coinciding with it. Those of the second group have a gross return higher than that of all the farms growing wheat and maize, but have very considerable working expenses; the farms of the fourth group have lost ground from the fact of too small gross returns.

It remains to consider the farms of the eighth and seventh groups: these have secured a social income lower than the average. The reason for this may be found in the deficiency in gross return.

On the farms of the first and seventh group it is possible for the cultivator to retain nearly half the social income for his own use, the former because they have not allowed the interest return on the family capital to fall too low; the latter because they have employed very little labour and a great deal of family labour. On the farms of the second and of the third groups, the farmer's income represents 33 to 40 per cent. of the social income; this also depends on the extent of the family labour. On the farms of the fourth, fifth and sixth groups, the outside labour costs are too high in comparison with the family labour remuneration; on the farms of the eighth group both the outside labour costs and the taxes are too high. None of these farms leave the cultivator more than a share of the social income ranging between 8 and 17 per cent.

(d) *Beef and hogs breeding farms.*

Farms of the third group would have yielded a much higher social income if they had not made unduly large purchases of stock feeds—actually amounting to 30 gold francs per hectare above the average of all the farms grouped under (d)—since they show a gross return exceeding by 40 gold francs the average gross return of the group. They were outstripped by the farms of the first group which had less heavy expenses. The farms of the second group had lower expenses still, and as the gross return did not fall in the same proportion, the social income was maintained, together with that of the farms of the first and third groups, above the average social income. For the remaining four groups, the gross return was too low for it to be possible to secure a social income as high as that of the farms of the three first groups.

TABLE I. — Gross Return, Farm Expenses,

CLASSIFICATION	Number of farms	Average area ha.	ANIMAL PRODUCTS			
			CATTLE		Pigs	Other stock
			Slaughter stock 1	Milk and milk products 2		
(a) General farming (corn):						
(1) Christian	30	110.07	10	15	33	
(2) Edgar, Douglas, Coles, Moultrie	34	114.20	26	11	28	
Average	64	112.27	18	13	30	
(b) Dairying:						
(1) Kendall, du Page, Cook, Lake, Kane	51	78.63	12	128	23	
(2) Will	37	78.22	—	134	22	
(3) Boone, McHenry	30	86.68	27	56	19	
(4) De Kalb	50	80.61	36	42	40	
(5) Winnebago, Stephenson	35	79.80	25	44	39	
Average	203	80.43	21	82	29	
(c) General farming (wheat and corn):						
(1) Clark, Crawford	30	84.74	14	13	36	
(2) Pike, Brown	30	100.44	25	9	50	
(3) Scott	42	84.13	8	25	31	
(4) Jersey, Macoupin	32	112.01	11	4	32	
(5) Sangamon	32	102.38	21	17	37	
(6) Morgan, Greene	51	101.65	13	17	50	
(7) Effingham	34	80.37	6	16	8	
(8) Mason, Cass, Menard	35	95.38	15	12	29	
Average	286	95.12	14	14	36	
(d) Beef and hogs:						
(1) McDonough	30	89.72	23	13	59	
(2) Warren, Bureau, Henry	41	98.94	34	10	40	
(3) Hancock	44	97.32	46	11	65	
(4) Mercer	30	79.76	15	9	43	
(5) Fulton, Schuyler, Peoria	30	81.91	5	15	51	
(6) Henderson	41	82.96	12	7	43	
(7) Adams	30	85.14	14	10	36	
Average	246	88.76	24	11	49	
(e) Wheat and dairying:						
(1) St. Clair	30	64.02	3	36	19	
(2) Randolph, Monroe, Washington	39	81.30	4	35	9	
(3) Bond, Montgomery, Shelby	38	60.86	—	55	21	
(4) Madison	30	92.27	15	18	21	
(5) Clinton	30	67.22	—	39	8	
Average	167	72.99	5	36	9	

A) ILLI

Income. in 1932-33 (in gold francs per ha).

Total	Crop production various branches	Total Gross return	Net return 8 (7-14)	Labour costs	Taxes	Social income 11 (8+9+10) or (7-12+13)	WORKING EXPENSES		Farming expenses
							Seeds, fertilisers, fodder	Other expenses	
5	6	7	8 (7-14)	9	10	11 (8+9+10) or (7-12+13)	12	13	14

FARMS.

62	47	109	7	45	19	71	—	38	102
71	10	81	- 20	44	20	44	—	37	101
67	27	94	- 7	44	19	56	—	38	101
179	6	185	0.2	71	26	97.2	19	68.8	184.8
178	3	181	- 14	69	19	74	48	59	105
114	3	117	- 13	57	15	59	2	56	130
134	2	136	- 30	58	23	51	27	58	166
119	3	122	- 52	58	18	24	43	55	174
147	4	151	- 21	63	21	63	27	61	172
85	2	87	- 16	46	12	42	11	34	103
91	3	94	- 21	44	16	39	22	33	115
74	3	77	- 25	52	14	41	2	34	102
53	14	67	- 24	44	17	37	—	30	91
82	2	84	- 27	49	20	42	2	40	111
86	2	88	- 28	52	17	41	8	39	116
47	3	50	- 28	41	8	21	7	22	78
64	5	69	- 35	46	19	30	—	39	104
73	5	78	- 26	47	16	37	6	35	104
106	3	109	- 20	52	17	49	15	45	120
91	1	92	- 25	48	17	40	9	43	117
132	2	134	- 26	52	19	45	45	44	160
76	3	79	- 25	48	15	38	5	36	104
79	4	83	- 31	50	16	35	9	39	114
69	2	71	- 36	46	17	27	8	36	107
70	4	74	- 37	49	15	27	9	38	111
92	3	95	- 28	49	17	38	16	41	123
86	27	113	- 21	70	14	63	—	50	134
64	6	70	- 23	47	10	34	—	36	93
97	9	106	- 36	62	15	41	11	54	142
63	3	66	- 35	52	14	31	—	35	101
68	7	75	- 42	61	11	30	—	45	117
64	19	83	- 31	57	13	39	2	42	114

CLASSIFICATION	Number of farms	Average area ha.	ANIMAL PRODUCTION				Total	Crop production various branches	Total Gross return	Net return 8 (7-14)	Labour costs	Taxes	Social income 11 (8 + 9 + 10) or (7-12+13)	WORKING EXPENSES		Farming expenses
			CATTLE		Pigs	Other stock								Seeds, fertilisers, fodder	Other expenses	
			Slaughter stock 1	Milk & milk products 2													3	4	12	13	14
(f) Mixed farming:																
(1) White, Wabash, Edwards, Saline	30	81.54	5	12	23	14	54	3	57	- 22	40	11	29	—	28	79
(2) Jefferson, Jackson, Richland	39	71.87	1	19	8	12	40	4	44	- 34	44	8	18	—	26	78
Average . . .	69	76.07	3	16	14	13	46	4	50	- 29	42	10	23	—	27	79
(g) Grain farming:																
(1) Champaign	31	91.74	8	10	18	6	42	41	83	- 29	49	23	43	—	40	112
(2) Macon, De Witt, Logan, Piat.	53	101.53	13	14	14	9	50	28	78	- 31	45	22	36	—	42	109
(3) Iroquois, Kankakee, Vermilion	37	94.73	7	20	16	12	55	17	72	- 37	48	21	32	—	40	109
(4) Ford	30	106.92	6	14	17	9	46	17	63	- 40	45	19	24	—	39	103
Average . . .	151	98.92	9	15	16	9	49	26	75	- 34	46	22	34	—	41	109
(h) Mixed live stock:																
(1) Ogle, Lee	36	91.21	36	21	31	11	99	1	100	- 33	51	20	38	13	49	133
(2) Rock Island	30	76.12	17	19	50	10	96	4	100	- 40	57	20	37	15	48	140
(3) Whiteside, Carroll	32	62.56	24	37	48	16	125	4	129	- 43	68	17	42	32	55	172
(4) Jo Davies	30	90.16	4	30	28	11	73	6	79	- 48	53	13	18	20	41	127
Average . . .	128	80.26	21	26	38	11	96	4	100	- 41	57	17	33	19	48	141
B) IOWA FARMS.																
Farms of the Centre	87	94.29	34	17	50	9	110	31	141	— 52	39	20	7	19	115	193
C) INDIANA FARMS.																
Dairy farms of North-West	23	112.90	25	30	26	26	107	17	124	25	15	18	58	14	52	99
Pasture and grain farms of Kankakee.	107	58.68	4	39	40	28	111	21	132	25	13	22	60	16	56	107
Mixed dairy farms of North East	47	80.13	—	79	24	19	122	16	138	21	16	25	62	16	60	117
Cash grain farms of West	51	89.84	14	21	17	13	65	2	67	15	8	13	36	12	19	52
Mixed farming of the Centre	53	80.53	3	14	58	10	91	11	102	15	11	21	47	17	38	87
General farming of the North-East	113	64.75	10	49	32	34	125	20	145	22	16	23	61	22	62	123
Wheat and corn farms of South-West.	250	81.34	7	23	52	22	104	24	128	20	14	25	59	20	49	108
Hill farms of the South	26	82.55	1	30	38	20	89	32	121	17	21	25	63	16	42	104
Other farms	40	107.64	5	17	41	12	75	25	100	8	12	27	47	10	43	92
Average . . .	710	78.51	7	31	41	23	102	19	121	19	14	23	56	17	48	102

TABLE II. — Percentage Composition of the Social Income in 1932-33.

CLASSIFICATION	Number of farms	Average area in ha.	INCOME PASSING TO THIRD PARTIES				OPERATOR'S RETURN			Social income
			Taxes	Interest on debts	Wages of employees	Total	Wage claim for work of family	Return on own capital	Total	
			%	%	%	%	%	%	%	%
A) ILLINOIS FARMS.										
(a) General farming (corn):										
(1) Christian	30	110.07	26.62	—	17.24	43.86	45.53	10.61	56.14	100
(2) Edgar, Douglas, Coles, Moultrie . . .	34	114.20	46.69	—	34.99	81.68	64.41	46.09	18.32	100
Average	64	112.27	35.01	—	24.69	59.70	53.39	13.09	40.30	100
(b) Dairying:										
(1) Kendall, Du Page, Cook, Lake, Kane.	51	78.63	27.08	—	22.45	49.53	50.26	0.21	50.47	100
(2) Will	37	78.22	26.16	—	30.33	56.49	62.39	18.88	43.51	100
(3) Boone, McHenry . .	30	86.68	26.20	—	21.58	47.78	74.76	22.54	52.22	100
(4) De Kalb	50	80.61	45.30	—	27.06	72.36	86.47	58.83	27.64	100
(5) Winnebago, Stephenson	35	79.80	72.35	—	48.43	120.78	190.32	211.10	20.78	100
Average	203	80.43	33.37	—	26.62	59.99	72.96	32.95	40.01	100
(c) General farming (wheat and corn):										
(1) Clark, Crawford . .	30	84.74	26.92	—	24.19	51.11	86.18	37.29	48.89	100
(2) Pike, Brown	30	100.44	41.79	—	25.47	67.26	89.22	56.48	32.74	100
(3) Scott	42	84.13	34.18	—	26.20	60.38	101.28	61.66	39.62	100
(4) Jersey, Macoupin . .	32	112.01	46.58	—	36.00	82.58	81.72	64.30	17.42	100
(5) Sangamon	32	102.38	48.35	—	42.44	90.79	74.60	65.39	9.21	100
(6) Morgan, Greene . . .	51	101.65	40.58	—	42.99	83.57	85.07	68.64	16.43	100
(7) Effingham	34	80.37	37.40	—	14.95	52.35	184.81	137.16	47.65	100
(8) Mason, Cass, Menard .	35	95.38	61.83	—	30.50	92.33	122.14	114.47	7.67	100
Average	286	95.12	42.13	—	32.77	74.90	95.53	70.43	25.10	100
(d) Beef and hogs:										
(1) McDonough	30	89.72	33.88	—	26.16	60.04	80.44	40.48	39.96	100
(2) Waren, Bureau, Henry	41	98.94	42.43	—	27.29	69.72	92.60	62.32	30.28	100
(3) Hancock	44	97.32	41.89	—	38.68	80.57	76.31	56.88	19.43	100
(4) Mercer	30	79.76	40.25	—	20.06	60.31	105.98	66.29	39.69	100
(5) Fulton, Schuyler, Peoria	30	81.91	45.73	—	25.74	71.47	115.05	86.52	28.53	100
(6) Henderson	41	82.96	64.37	—	24.94	89.31	150.77	140.08	10.69	100
(7) Adams	30	85.14	54.61	—	33.59	88.23	150.79	139.02	11.77	100
Average	246	88.76	44.38	—	29.04	73.42	101.65	75.07	26.58	100
(e) Wheat and dairying:										
(1) St. Clair	30	64.02	22.48	—	21.50	43.98	89.57	33.55	56.02	100
(2) Randolph, Monroe, Washington	39	81.30	28.76	—	20.99	49.75	118.42	68.17	50.25	100
(3) Bond, Montgomery, Shelby	38	60.86	35.84	—	39.48	75.32	112.03	87.35	24.68	100
(4) Madison	30	92.27	44.26	—	34.44	78.70	134.96	113.66	21.30	100
(5) Clinton	30	67.22	36.96	—	37.47	73.43	163.88	137.31	26.57	100
Average	167	72.99	32.36	—	29.41	61.77	118.44	80.21	38.23	100

CLASSIFICATION	Number of farms	Average area in ha.	INCOME PASSING TO THIRD PARTIES				OPERATOR'S RETURN			Social income
			Taxes	Interest on debts	Wages of employees	Total	Wage claim for work of family	Return on own capital	Total	
			%	%	%	%	%	%	%	%
(f) Mixed farming:										
(1) White, Wabash, Edwards, Saline . . .	30	81.54	38.30	—	25.34	63.64	110.85	74.49	36.36	100
(2) Jefferson, Jackson, Richland, Marion, Wayne, Clay, Johnson	39	71.87	43.39	—	17.76	61.15	226.17	187.32	38.85	100
Average	69	76.07	40.56	—	22.17	26.73	158.80	121.53	37.27	100
(g) Grain farming:										
(1) Champaign	31	91.74	53.19	—	22.18	75.37	92.89	68.26	24.63	100
(2) Macon, De Witt, Logan, Plat	53	101.53	60.77	—	34.52	95.29	89.89	85.18	4.71	100
(3) Iroquois, Kankakee Vermilion	37	94.73	66.15	—	29.73	95.88	119.50	115.38	4.12	100
(4) Ford	30	106.92	81.93	—	41.62	123.55	145.50	169.05	23.55	100
Average	151	98.92	63.26	—	31.56	94.82	105.47	100.29	5.18	100
(h) Mixed live stock:—										
(1) Ogle, Lee	36	91.21	40.25	—	26.49	66.74	134.45	101.19	33.26	100
(2) Rock Island	30	76.12	53.68	—	26.69	80.37	129.41	109.78	19.63	100
(3) Whiteside, Carroll . .	32	62.56	40.25	—	26.49	66.74	136.45	103.19	33.26	100
(4) Jo Davies	30	90.16	68.76	—	48.97	117.73	248.14	265.87	17.73	100
Average	128	80.26	51.86	—	30.03	81.89	139.79	121.68	18.11	100
(B) IOWA FARMS.										
Farms of the Centre . . .	87	94.29	293.25	233.34	205.89	732.48	359.19	991.67	632.48	100
(C) INDIANA FARMS.										
(1) Pasture and grain farming of Kankakee	23	112.90	31.95	5.59	21.09	58.63	4.26	37.11	41.37	100
(2) General farming of North-East	107	58.68	36.10	9.52	15.52	61.14	6.86	32	38.86	100
(3) Dairy farms of North-West	47	80.13	40.22	4.76	18.74	63.72	7.54	28.74	36.28	100
(4) Hill farms of the South	51	89.84	36.34	13.80	15.76	65.90	7.19	26.91	34.10	100
(5) Other farms	53	80.53	44.25	8.07	19.87	72.19	3.53	24.28	27.81	100
(6) Dairy farms and general farming of North-East . .	113	64.75	37.11	12.59	17.82	67.52	9.48	23	32.48	100
(7) Mixed farms of Centre	250	81.34	42.12	11.67	17.68	71.47	5.74	22.79	28.53	100
(8) Wheat and corn farms of South-West	26	82.55	39.95	7.54	26.25	73.74	6.65	19.61	26.26	100
(9) Cash grain farms of West	40	107.64	57.66	8.26	22.26	88.18	2.54	9.28	11.82	100
Average	710	78.51	40.77	10.24	18.36	69.37	6.17	24.46	30.63	100

The share of the social income ensured to the cultivator by beef and hogs farms is less than that yielded by the dairy farms, the farms growing corn and those growing wheat and corn. The farmers of counties McDonough and Hancock (first and fourth groups) are able to keep for themselves 40 per cent. of the social income; those of the second group 30 per cent.; those of the fifth group 28 per cent.; those of the fourth group 19 per cent., the costs of outside labour exceeding 10 per cent. of the average costs of paid labour. As regards the farmers of the sixth and seventh groups, the fact that their share of social income is not more than 11 per cent. is due to the very low interest return on the family capital.

(e) *Wheat and dairying.*

In order to secure the highest gross return, the farms of the first group had to employ a large quantity of outside labour. As the working expenses were quite normal, the social income is seen to be much in excess of the average social income (*viz.*, by 24 gold francs per hectare). The farms of the third group also secured a high gross return, but at the cost of excessively high working expenses; the social income is hardly more than the average social income. There is little to choose between the farms of the second, fourth and fifth groups. The social incomes obtained approximate very closely in each case.

The operator's return on the farms of the first and the second group is equivalent to about one half of the social income; that on the farms of the third, fourth and fifth groups represents no more than a fourth or even a fifth share of the social income. These differences are due, for the farms of the first fourth and fifth group, to the amount of the gross return; for those of the third group, to the extent of the working expenses. As regards the farms of the second group, although showing a gross return as low as the farms of the fourth and fifth groups, and incidentally a social income also low, their labour costs and especially the costs of paid labour, are much less considerable.

(f) *Mixed farming.*

The farms of the second group, on account of failure in pig raising, show a gross return and social income less than those of the farms of the first group. However, per 100 francs of the social income, the farms of the second group show a higher operator's return, owing to the fact that their costs of paid labour are much less.

(g) *Cash grain farms.*

There are no appreciable differences between the farm expenses of the groups belonging to this system of production. The amount of the social income depends on that of the gross return. The relation between the gross return, the social income and the work of the farmer's family is no longer satisfactory: the most favoured farms from this point of view—the farms of the first group—leave to the farmer only one fourth of the social income; those of the second

and those of the third group do not allow him to take for his own use more than 4 per cent. of the social income. The farms of the fourth group gave an interest return on the family capital so low that the family farmer must draw on his own capital, 23 francs for every 100 of social income, in order to pay his creditors.

(h) *Mixed live stock farms.*

The social income is relatively low as the working expenses are at a high level owing to somewhat large purchases of feeds. The highest social income was obtained on the farms of the third group (Whiteside, Carroll), as these farms yielded a high gross return. As with the farms of the first group, one third of the social income remained for the cultivator on these farms. The position of the farms of the fourth group is very unsatisfactory; for every 100 francs of social income, the farmer has to draw 18 francs from his own capital to pay creditors; the gross return was too low.

(B) FARMS OF IOWA.

These farms gave in round figures a social income of 7 francs per hectare: the gross return is high but the working expenses are too large by far. The situation of the farmer is thus disastrous. The sum that represents the social income is not large enough to cover the total of the taxes, and payment for the interest on debts and for the labour engaged thus falls on the cultivator.

(C) FARMS OF INDIANA.

These farms are distinguished from those of the two regions previously treated less by the high level of the social income than by the components of the farm expenses. The net return, at first negative, becomes positive. The social income would be much higher than it actually is, if the labour costs were as large as in Illinois and in Iowa, and the farm expenses less high. If these latter had remained what they were in Illinois and if the labour costs had risen to the level of the same costs in Illinois, the net return would have become negative and the social income would not have shown any variation.

A social income higher than the average social income of the farms of Illinois is shown by the farms of the South-West growing wheat and maize, the dairy farms of the North-West, the mixed dairy farms of the North-East, the mixed farms of the Centre, the farms of multiple production of the North-East, and the pastoral and cereal yielding farms of Kankakee. It is these farms which have obtained the highest gross returns. Whenever the cereal yielding farms of the West, the farms of the Southern hills, and those included as "other farms" show a social income below the average the reason is that the gross return is lower than the average, while the working expenses are as considerable as those of farms with a higher gross return.

TABLE III. — *The Percentage Composition of the Social Income in 1932-33 in some regions of the United States and in Europe.*

CLASSIFICATION	Number of farms	Average area in ha.	INCOME PASSING TO THIRD PARTIES				OPERATOR'S RETURN			Social income %
			Taxes	Interest on debts	Wages of employees	Total	Wage claim for work of family	Return on own capital	Total	
			%	%	%	%	%	%	%	

(4) FARMS OF UNITED STATES.											
(a) <i>Illinois farms.</i>											
(1) General farming (corn) . .	64	112.27	35.01	—	24.69	59.70	53.30	13.09	40.30	100	
(2) Dairying	203	80.43	33.37	—	26.62	59.99	72.96	32.95	40.01	100	
(3) Wheat and dairying . . .	167	72.99	32.36	—	29.41	61.77	118.44	80.21	38.23	100	
(4) Mixed farms	69	76.07	40.55	—	22.17	62.73	158.80	121.53	37.27	100	
(5) Beef and hogs	246	88.76	44.38	—	29.04	73.42	101.65	75.07	26.58	100	
(6) General farming (wheat and corn)	286	95.12	42.13	—	32.77	74.90	95.53	70.43	25.10	100	
(7) Mixed live stock	128	80.26	51.86	—	30.03	81.89	139.79	121.68	18.11	100	
(8) Cash grain farms	151	98.92	63.26	—	31.56	94.82	105.47	100.29	5.18	100	
(b) <i>Iowa farms.</i>											
Farms of the Centre . . .	87	94.29	293.25	233.24	205.89	732.48	359.19	99.167	632.48	100	
(c) <i>Indiana farms.</i>											
Average . . .	710	78.51	40.77	10.24	18.36	69.37	6.17	24.46	30.63	100	
(B) EUROPEAN FARMS.											
DENMARK:											
Farms from 50 to 100 ha . .	76	65.20	7.87	—	45.41	53.28	22.27	24.45	46.72	100	
Farms over 100 ha.	48	198.90	9.13	—	61.06	70.19	11.06	18.75	29.81	100	
FINLAND:											
Farms from 50 to 100 ha. . .	77	73.73	2.64	14.66	51.67	68.97	11.87	19.16	31.03	100	
Farms over 100 ha.	17	144.85	3.59	16.63	58.31	78.53	7.11	14.36	21.47	100	
GERMANY:											
Forage growing farms:											
West, over 100 ha.	82	194	—	10.73	21.47	71.75	103.95	10.73	14.68	3.95	100
East, over 100 ha.	183	432	—	10.61	31.82	83.33	125.76	6.06	31.82	25.76	100

An operator's return higher than the average of such returns, that is to say, higher than 30 per cent. of the social income is yielded by the following groups of farms:

- the pasture and grain farms of Kankakee;
- the farms with multiple production of the North-East;
- the hill farms of the South;
- the dairy farms of the North-West;
- the mixed farms of the North-East.

An operator's return lower than the average operator's return, that is lower than 30 per cent. of the social income is given by:

- the farms of the South-West growing wheat and corn;
- the mixed farms of the Centre;
- the "other farms";
- the cash grain farms of the West.

The wheat and corn growing farms of the South-West show costs of outside labour; the mixed farms of the Centre, interest on debts; the "other farms" and the cereal yielding farms of the West, costs of outside labour, too high in relation to the social income.

Before finally leaving the tables it may be once again pointed out that the farms of Illinois, Iowa and Indiana for which accountancy results are available engage mainly in stock farming and outturn of live stock products.

It would be of great interest to institute a comparison between these farms and the European farms. This would involve an attempt to compare the groups of American farms and groups of European farms most nearly resembling each other and as nearly as possible of the same size. In our article entitled "Some Observations on Farm Accountancy Methods in the United States" which appeared in the February number of this *Bulletin* it was stated that the accountancy data supplied by the American Offices allow of the exact calculation of the net return and in consequence of the social income. There is accordingly full justification for placing side by side the percentage composition of the social income in the United States and that of the social income in respect of European farms.

The Iowa farms may be left out of count: the interest return on the family capital is too exceptionally low relatively to the other components of the social income to make it possible to draw any useful conclusions from a comparison between the percentages of the social income of this region and other percentages. The first observation that should be made will bear on the interest return on the family capital. Except in Indiana this stands at a much lower level in the United States than in Europe. In Germany where this return is negative it has not fallen so low as Illinois. Moreover the cultivator in Illinois has still the possibility of retaining for himself from 5 to 40 per cent. of the social income, whereas his compeer in Germany is obliged to draw on his own capital a sum corresponding to from 4 to 26 per cent. of the social income to meet the payments due to his creditors. The reason for this is simple: the costs of paid labour are immensely higher, relatively to the social income,

in Europe, and especially in Germany, than in the United States. It seems however that in the States for the most part it is the members of the family who cultivate the farms of from 50 to 100 hecares; in Europe on the farms of this extent it is the paid labour which is the most numerous. Owing to this distribution of the labour, the farms of Illinois and of Indiana leave to the cultivator a share of the social income as high as in Denmark or in Finland, and much larger than in Germany. It is the more clear that this result is due to this distribution of labour when it is observed that in the United States the taxes, taken as a percentage of the social income, are enormously higher than in Europe.

A number of other very interesting observations might be made by going into the details, but it is not desired to depart from the general lines already laid down. Without going further it may be stated that in using the relative figures there is complete justification for comparing the final results of the farms belonging to the different continents.

Joseph DESLARZES.

THE ECONOMIC ASPECT OF THE WORLD PROBLEM OF THE PRODUCTION AND CONSUMPTION OF COFFEE (*continuation*)

COLOMBIA.

After Brazil, though at a considerable distance, Colombia is the largest coffee producer in the world. The geographical conditions imposé coffee growing in this American republic and make that plant the principal element in its agriculture. From the statistical tables given in the first part of this work we have the number of coffee trees in Colombia and the average production in the last four years. With the following figures relating to Colombian coffee exports the main data are thus complete.

Year	Exports of coffee in bags of 60 kgs.
1835	2,592
1845	23,915
1855	34,393
1865	66,795
1875	76,011
1885	110,866
1895	358,341
1905	500,811
1915	1,129,849
1925	1,946,730
1931	3,017,399
1932	3,384,739
1933	3,464,388
1934	3,126,368

Colombia began exporting in 1835 with 2,592 bags of 60 kgs. We may observe the manner in which these exports have grown in ten year periods and in the last four years up to 1934.

The increase was continuous and accelerated after 1895 when the plantations began to yield abundant returns.

It is a fact that there is no serious coffee problem in Colombia, for the country succeeds in placing almost the whole of its production on foreign markets and limits its action to the continual defence of its prices and everything relating to the trade and technical side of the product. These tasks are confided to the National Federation of Coffee Producers (*Federación Nacional de Cafeteros*) which up to now has succeeded, as we have said, in avoiding repercussions on the country of the general anomalies of the world market occasioned by the over-production in Brazil.

Indeed, the fact that production and trade have been able to show increasing vitality and to pass through the important crisis of recent years is due to the protective measures in all directions taken by the Federation or, at its request, by the State. It is indeed a considerable achievement of that body, to have succeeded in keeping up demand and in disposing, on relatively favourable conditions, of the whole of Colombian coffee production at a time when many other coffee producing countries lost ground.

In 1932, when the Brazilian revolution took place, a favourable moment occurred of which the Federation could take advantage. The prices of Colombian coffee, Medellin and Girardot, fluctuated on the New York market about 12 and 10 1/2 centavos per pound respectively. The port of Santos, in Brasil, was blocked and afterwards closed as a result of the revolution. Coffee of the quality of Santos became scarce on foreign markets, which stimulated a price reaction in the mild coffees following the demand for them to substitute in mixtures of the Santos type. As a result Colombia saw the prices of its Medellin and Girardot rise by 35 per cent. During this period the Federation continued to manage and direct the producers, and it was the Federation which contributed to the maintaining of the high level which allowed all available quantities to be exported, for, on the termination of the revolution, when Brazil prepared to restore its market to normal, there was not a single bag left in Colombian ports.

Later, at the end of 1932 and up to June 1933 a period of serious depression occurred on the market. Brazil, seeking to regain what she had lost during the revolution and to re-establish her position on foreign markets, began to force exports by reducing the value of the currency and by starting to grant bounties. To counteract the depression the Federation took the following steps. Firstly, it opposed the policy, favoured by some sections of Colombian opinion, of stock holding and artificial rises in the price level, a policy which had had unfortunate consequences for Brasil. It had put into force the decree for regulating the types and marks of coffee, of which the immediate result was to stop the fall in prices. It set up new coffee stores in the interior of the country in order to help the spread of consumption. It considerably intensified its propaganda work abroad in aid of Colombian coffees. Once more the Federation

saved the situation and succeeded in maintaining the price at a remunerative level and in stabilising the trade in coffee.

The Federation was then put to the test on the occasion of the American banking crisis of 1933 which profoundly shook the economic system of the United States and created everywhere a feeling of insecurity. On this occasion too the Federation succeeded in its defensive policy.

The best proof of the efficiency of this policy is given by the figures of the trade of Colombia. The most recent relate to the financial year 1934, the last year for which we have official data.

The total value of imports into the country amounted to 87,427,000 pesos. The value of coffee exports amounted to 82,460,000 pesos that is, 94.32 per cent. of the imports is covered by coffee alone.

Coffee constitutes the basic wealth of the country and, it is of interest to note, wealth which is widely distributed, for Colombia among all the coffee producing countries is the country in which the small estate is most widespread, as may be seen in the following table.

Number of trees in plantations	Number of plantations	Percentage of the total
Less than 5,000	129,556	86.75
5,001 to 20,000	16,921	11.33
20,001 to 60,000	2,226	1.49
60,001 to 100,000	324	0.22
Over 100,000	321	0.21
Total	149,348	100.00

That is, after the small plantations only 10 per cent. are of medium size, whilst only 0.50 per cent. are large plantations.

The quantity of coffee exported for 1934 amounted to 3,152,028 bags of 60 kgs. The distribution of Colombian coffee between the different consuming markets is as follows:

Country	Export of Colombian coffee (in bags of 60 kgs.)
United States	2,499,676
Germany	358,892
Netherlands	56,297
France	50,262
Italy	30,124
Sweden	16,978
Spain	14,787
Belgium	10,235
Great Britain and Northern Ireland	8,461
Norway	6,645
Denmark	6,178
Finland	5,649
Other countries	89,844
	<hr/> 3,152,028

It will be seen that the United States absorb 79.31 per cent. of the exports.

VENEZUELA.

The soil of Venezuela is, in the south and west, but an extension of Brazilian and Colombian lands, and, up to 1830, the year in which it acquired its full independence, Venezuela formed with Ecuador and Colombia one national territory created by Bolivar under the name of Great Colombia.

Coffee growing was introduced into this Republic in 1748 by the conquerors, but its cultivation remained stationary for many years until the lack of trade in the agricultural commodities produced in the country, due to the difficulties of maritime trade, which hindered the trade of the country with Europe, made evident the necessity of preferring for cultivation a product which can keep for a long time and can be adapted to the special conditions created by the scarcity and irregularity of the communications between the Republic and the European continent. It was then thought of intensifying the cultivation of coffee, relegating to second place that of cacao, which was at the time predominant but which did not lend itself as easily to transportation.

At the end of the 18th century the export trade in coffee was already beginning to have a certain significance, for at this time some 708 bags of 132 pounds (approximately 60 kgs.) were exported annually. Ten years later exports had reached already the level of 60,606 bags and from then onwards, except during the war of independence, exports increased continually, reaching their culminating point during the great war and declining thereafter.

On this question the Ministry of Finance of Venezuela gives the following figures:

Years	Export of coffee in bags of 60 kgs.
1786-1790 (average)	708
1810	60,606
1850	234,678
1901-05 (average)	715,000
1912-14 "	979,000
1915-23 "	868,906
1924-33 "	848,673

It is seen that production was continually developing. By the end of 1905 Venezuela held third place among the coffee producing countries and its production represented 6.7 per cent. of world production and 16 per cent. of the production of mild coffees. During this time the pest was ravaging the Dutch coffee plantations, causing a considerable diminution in their production, and Venezuela took second place. 19 per cent of the mild coffees consumed then came from Venezuela.

These figures however say nothing as to the possibilities of coffee production in the country. Of all the countries growing coffee it is incontestably the most primitive and backward in technique. With fertile lands and excellent qualities of coffee and with natural conditions equal to and sometimes

better than those in other countries, the yield reaches only 230 grammes, whilst in other American producing countries it exceeds 500 grammes on the average and in some fertile plantations of Caldas in Colombia it reaches up to 900 grammes and in Brazil up to 1,750 grammes.

From the beginning of the twentieth century up to 1925 coffee cultivation constituted the foundation of the national wealth of Venezuela, but in this latter year the exploitation of petroleum outweighed that of coffee. The consequences of this change are felt in the most thickly populated part of the country which is the area dominated by coffee plantations.

Thus we see that the economic problem in this country is due in large part to the backward state of the technique of cultivation, and to the introduction of the exploitation of petroleum, from which the country only receives an indirect benefit since it is in the hands of powerful foreign companies.

The government reacted to this situation chiefly by setting up experimental centres and centres of agricultural instruction. Beyond this, export premiums have been instituted and there has just been founded the Association of Coffee Cultivators with a purpose similar to that fulfilled by the important bodies that we have described in the cases of Brazil and Colombia. Recently the Government started a policy of commercial agreements with some countries and has already signed two, one with France and the other with Spain, which undoubtedly will assist the sale of Venezuelan coffee in these countries.

GUATEMALA.

Since the beginning of the twentieth century this Republic has occupied fourth place among the coffee producing countries. Owing to the state of fertility of the national territory coffee is not, as in other American republics, the fundamental product of the economic structure. In the temperate as in the tropical regions other products are of importance. Further the country is prosperous owing to the hard working character of the inhabitants and to the fact that there is available to them in their own land almost all the raw material which they need.

The cultivation of coffee was introduced into Guatemala at the end of the eighteenth century and has developed along the same lines as in almost all the South American countries; at first slowly by reason of the struggles for independence and the lack of communications with the export ports; then, towards the middle of the nineteenth century more rapidly, and around the year 1900 cultivation reached its maximum development which has been maintained up to the present time.

The government has always given considerable aid to the coffee cultivators and to the trade, as evidenced by the foundation of the Central Board for Coffee (*Oficina Central del Café*) which is the body directly charged with watching over the interests of the coffee cultivation and trade and with the task of suggesting to the Government appropriate measures for maintaining prices.

The following figures shew the development of the exports from Guatemala from 1850 to 1900.

Year	Exports (bags of 60 kgs.)
1850	4,500
1870	100,000
1880	200,000
1890	500,000
1895	600,000
1900	750,000

During the first quarter of the present century the exports remained on the average at the level of 1900, and from 1925 up to the present time they have been maintained at about 800,000 bags.

Of this quantity of exports North America absorbs approximately 38 per cent. whilst 60 per cent. go to European destinations, the remainder, which is almost negligible, being taken by the continent of Asia.

In Europe, Germany ranks first among the consumers of Guatemalan coffee, with a proportion of 18.69 per cent.; then come the Netherlands with 14 per cent. and Sweden and Czechoslovakia with 9 per cent. each.

The economic problem in regard to coffee in this republic is that of keeping the price of the product at a remunerative level and to this end the Government and the Central Coffee Board carry out all the appropriate measures. At present, prices, even though less than a year ago, are at a reasonable level which makes cultivation remunerative.

EL SALVADOR.

This is the smallest of all the Central-American republics but on the other hand has the densest population, there being 45 inhabitants to the square kilometre. It is a predominantly agricultural country and its activity in this direction is concentrated almost entirely on the cultivation of coffee, which is one of the most highly esteemed types of Central America.

Coffee cultivation and trade are governed in this country by the Producers' and Traders' Association of Salvador (*Asociación Cafetera del Salvador*) a body which is dependent on the government and makes use, in its financial work, of the Mortgage Bank. To meet the expenses caused to these two bodies an import tax was imposed of 2.50 colones (1 colon = 0.50 dollars) per quintal. But the flourishing state of trade induced the government to reduce this tax in August 1935 to 0.82 colones per quintal exported.

As a result of the protection which has always been accorded to coffee cultivation, backward methods, and the deficiencies in industrial working of the products and in transport disappeared a long time ago. In such a small country as Salvador where the area under coffee cultivation is a very high proportion of the total cultivable area (according to the Statistical Yearbook of the International Institute of Agriculture 100,000 hectares were under coffee in 1934), all the economic interests of the country are closely bound up with the prosperity of coffee cultivation.

We show below the statistics of coffee exports in various years and the proportion that these represent of the total exports of the republic. Nothing could show more clearly the importance to El Salvador of its cultivation of coffee.

Year	Exports	Percentage of total exports
1911.	25,561,602 kgs.	62
1921.	28,311,988 »	80
1931.	54,630,842 »	96
1932.	49,654,898 »	93
1933.	56,189,276 »	96
1934.	49,387,444 »	93

HAITI.

Since 1844 this country has been an independent republic, having separated itself from the rest of the island of San Domingo, which became the independent Dominican Republic. But we may disregard this political event, for exports and everything else related to the cultivation of coffee in these two countries, have always, up to a recent date been dealt with in respect to the two countries together.

The island of San Domingo is one of the oldest and most important coffee producing countries. The statistics of export which are available shew an export of 250,000, in 1800, of 400,000 in 1850 and of half a million bags in 1880, a figure which has been maintained, with small variations, up to the present time.

Coffee is the most important agricultural product of the island and the foundation of its wealth. At present the country is suffering from the consequences of low prices, but the Official Bulletin of the Dominican Republic estimates that the profit at present obtained by the cultivator fluctuates around 0.3 cents per pound of coffee, which may be considered remunerative.

Both governments of these republics take the necessary measures for the protection of the cultivation of coffee. Thus Haiti has just renewed its agreement with France by virtue of which that country takes on the average thirty per cent. of the production, which assures of the marketing of a minimum of 25,000 quintals per month. Recently, severe measures were taken with the purpose of improving the product to make Dominican coffee more capable of facing competition in the markets. The government of San Domingo has just published a law which controls the coffee intended for exportation, the principles of which go from prescriptions as to growing, up to the selection of the product for export, which in the future will only leave the country if it possesses all the qualities required by the law for the granting of the special "San Domingo" mark.

MEXICO, COSTA RICA, NICARAGUA AND ECUADOR.

The group of large coffee producing countries is completed by Mexico, Costa Rica, Nicaragua and Ecuador. This last republic, which began to export, towards the end of the last century, an annual average of 20,000 bags, is, of these four countries, the smallest producer. In fact the statistics shew in 1913 an

export from Ecuador of 50,000 bags which rose to 100,000 around 1920, a level which has more or less been maintained ever since. The other three countries are more important. The figures of production in Nicaragua are continually increasing. From the 20,000 bags in 1890 exports rose to 150,000 bags during the period immediately preceding the war. After the war the export figures fluctuated between 150,000 and 300,000 bags. The principal consumption markets of the coffees of these countries are in Europe. Of the 1934-35 harvest, which, according to official statistics published at Managua, was equal to 262,348 bags (of 150 pounds), France took 93,652 bags and Germany 52,104. The price, between 6.50 and 7.50 pesos per 100 pounds according to quality, fetched by the coffees of this republic, are somewhat low, but nevertheless may be regarded as remunerative.

Coffee is the foundation of the wealth of Costa Rica, and the Coffee Institute of that republic, which has control of all the aspects of cultivation, watches continually over its progress. The figures give evidence of the success of the activity of this official centre. In 1934 coffee represented 67 per cent. of the general export of the country. M. L. REGRAY indicates the following development of exports: in 1850 a level of 60,000 bags, in 1875, 175,000 bags, in 1890 rising to 200,000 and in 1914 to 250,000, and at present fluctuating between 325,000 and 350,000. Costa Rica lives entirely from its export trade of which the major part is, as we have seen, in coffee, which is the vital point of the economic structure of the country. From the figures published by the Coffee Institute an important decline in the prices of coffee from this country is observed. The good quality coffees of the 1933-34 harvest fetched 120 shillings per quintal in London, whereas the average price in the following year for the same coffee did not exceed 60 shillings per quintal. Thanks to the activity of the Institute Costa Rican coffee has recently been successfully introduced on new markets (Japan, China, the northern countries and the Canary Islands). The only coffee producing country of North America is Mexico, which began about 1855 to export and which twenty years later, in 1875, already was exporting 50,000 bags of coffee. The progress of Mexican coffee production was rapid, attaining considerable levels of exports during the pre-war period, rising from 200,000 bags in 1890 to 350,000 bags immediately before the war. After the war, production decreased, but during recent years it has once more increased up to an average of 400,000 to 500,000 bags. This increase is the result of the continued assistance on the part of the government. Recently it was agreed to make an advance of approximately half a million pesos to intensify cultivation in the State of Chiapa, and of other sums to reduce the mortgages on a number of properties. By a commercial treaty concluded between Spain and Mexico there has been revoked a clause which had been to the disadvantage of the latter country. The imports of Mexican coffee into Spain had previously been limited to the sum of exports of all kinds from Spain to Mexico. Now this limitation has been removed, and a quota of 2,500,000 kgs. of Mexican coffee imports into Spain has been established.

This completes the group of the countries which may be called the large coffee producing countries, and we leave to the final part of this study those

countries whose exports are less considerable. Before turning to this group we may outline some facts we have been able to obtain on the various colonial coffee producing countries.

COLONIAL COUNTRIES.

We have already seen in another part of this article, where we describe the world situation in coffee cultivation, the great expansion of that cultivation in the last ten years following upon the Brazilian policy which caused a large rise in the price of the product. Plantations in fact increased in size by over two thousand million coffee trees.

The disaster which ensued on the market has been a warning and probably Brazil and the other politically independent producing countries will stop further expansion of cultivation. Indeed all are abandoning monoculture in order to have other products to shelter them from an ever possible aggravation of the coffee problem.

We have just referred only to the countries which are independent from a political point of view, but it must not be forgotten that the total area capable of coffee cultivation is enormous, and that it includes the fertile soils of the colonial possessions. The possible expansion of cultivation under the protection of the metropolitan centre, where remunerative to the native and useful to that centre, might constitute a grave danger.

To the policy of assistance by which the independent countries seek to dispose of their coffee harvests and to maintain prices at a remunerative level, it is natural that there should correspond a similar policy on the part of the metropolitan centres, directed towards establishing colonial coffee plantations. This policy finds its clearest expression in the preferential duties which assist the trade of the colonies with the motherland. For the time being the price advantage which the colonial producers can obtain is not sufficient to induce them to extend their plantations. This diminishes the immediate danger on one hand and on the other—and this is the chief argument—the lack of labour raises great obstacles to the spreading of the coffee tree, in spite of the immense areas appropriate to their cultivation in the colonial territories.

We may now examine in turn the various colonial countries in which coffee is cultivated.

NETHERLANDS INDIES.

This region has been for a long time one of the largest coffee producers. It takes third place among the large coffee producing countries, coming immediately after Colombia. It contains 426 large plantations of which 303 on the island of Java are entirely worked by Europeans and 123 in the other provinces in the hands of natives and Europeans. Twenty five per cent. of these estates cultivate only coffee, the rest cultivate also other crops besides coffee. After Java, Sumatra is the principal centre of cultivation. The most widespread variety is the "Robusta" which covers 93 per cent. of the planted area. Then

come "Arabica" and "Liberia." The prominence of the first variety is due to the fact that the latter two were destroyed at the end of the last century by the *Hemileia* parasite, which checked the growth in production for many years. Before the invasion of the parasite in 1880 production was close on a million bags, whilst in 1895 only half that quantity was exported and in 1909 exports fell still more, according to the statistics, only reaching 250,000 bags. From then on there was a continuous rise, to 450,000 bags in 1913 and, in the last ten years from one million to two million bags. The production figures for the four years from 1929 to 1932 are as follows:

Year	European plantations (bags of 60 kgs.)	Native plantations (bags of 60 kgs.)	Total (bags of 60 kgs.)
1929	921,334	975,883	1,897,217
1930	671,884	903,933	1,575,817
1931	812,417	908,317	1,720,734
1932	1,045,250	1,105,967	2,211,217

As to exports, the International Yearbook of Agricultural Statistics gives the following figure:

Year	European plantations, quintals	Native plantations, quintals	Total, quintals
1930-31	403,129	542,361	945,490
1931-32	487,452	544,880	1,032,432
1932-33	627,146	699,576	1,326,722
1933-34	567,021	497,421	1,064,442

This total in quintals converted into bags of 60 kgs. represents about 80 per cent. of the production figures. Consumption of coffee is widespread among the natives.

The principal market to which the product goes is naturally that of the Netherlands. Then comes France followed by the Scandinavian countries. The coffee does not appeal in the United States and the imports into that country were only 211,000 bags in 1929, 83,500 in 1930 and 80,700 in 1931. In 1932 the imports into the United States increased considerably, up to 440,000 bags owing to the cessation of shipments from Santos, but in 1933 they fell to 87,000 bags.

BRITISH POSSESSIONS AND PROTECTORATES.

We may begin with British East Africa, since the territories of Kenya, Uganda and Tanganyika are the largest coffee producers.

(a) *Kenya*. — Coffee cultivation in this region was begun in 1893 but the commercial plantations only date from 1909, a period during which began to arrive on the English market the mild coffees of Kenya, which received a very good welcome. This fact was immediately reflected in the plantations and in 1914 2,226 hectares had already been planted almost all in the Kiamba

region. In this latter year coffee represented only 9 per cent. of the total of agricultural products exported. The great war checked its cultivation until, in 1918, the government of the colony took measures to increase it. In 1924 the area cultivated reached 24,303 hectares and the value of the exports 36 per cent. of the total exports. Progress continued and in 1928 the area cultivated rose to 34,000 hectares and the percentage of exports in the total exports rose to 50 per cent. The last figures given by the Department of Agriculture of the Colony and of the Protectorate of Kenya are those for 1934, which record a cultivated area of 41,374 hectares. Other facts of interest relate to the number of plantations which stands at 929 with an average size of 44.5 hectares.

Almost all the coffees cultivated in Kenya are of the "Arabica" variety.

Up to a short time ago everything relating to the cultivation and trade in coffee was in the hands of the Kenya Union of Coffee Planters but recently the Coffee Board was established. The Union and the Board study the best ways of introducing good methods of cultivation and the best way of preparation to combat the rather pronounced tendency of the coffee of the region to deteriorate. Beyond this the two bodies carry on intense propaganda for the product. The Coffee Board is maintained and covers its expenses by means of a tax of 6*d.* per cwt. on that coffee the growing and marketing of which has been assisted by its activity.

The average production of the last two harvests in Kenya was 248,185 bags of 60 kgs.

(b) *Uganda*. — The introduction of coffee growing in the Protectorate of Uganda is a recent event, and the comparative experiments made on the two varieties, Robusta and Arabica, have just been finished, preference being given the former because of its greater resistance to disease and its better adaptation to climate. In 1931 the Arabica variety was cultivated on an area of 7,420 hectares and the Robusta on an area of 8,450 hectares. In the following years the latter made considerable progress.

The Uganda Department of Agriculture has established a service of inspection and classification for coffees for export which looks efficiently after the interests of the producers.

The last figures available of the area under cultivation are those of the financial years 1932-33 and 1933-34, which give an annual average of production of 79,387 bags, of 60 kgs. whilst the area under cultivation equalled 17,029 hectares.

(c) *Tanganyika*. — In view of the similarity of all these regions of East Africa, we may summarise the data relating to Tanganyika. There the varieties Robusta and Arabica are produced, the first being preferred in the Bulcoba district, the second in the other districts. In 1931 the cultivated area under coffee was 47,359 hectares. The average production during 1932-33 and 1933-34 reached the figures of 215,400 bags of 60 kgs. In the Department of Agriculture there is a section which controls cultivation, preparation and exportation and, thanks to the work of the experimental coffee station at Kilimanjaro all the coffee which leaves the territory possesses the necessary qualities, the exports of falsified products which once were made having ceased.

INDIA.

In the mountainous regions the principal zones of cultivation of the country are Madras, Coorg, Mysore, Travancore and Cochin. The total area under coffee plantations is 71,500 hectares, which yielded an exportable production in 1932-33 of 246,000 bags of 60 kgs. This however was an exceptional production figure; the average may be put at 175,000 bags.

The coffee problem in British India is entirely of a technical character and the authorities give their greatest attention, by means of the experimental stations they have set up, to cultivation, and to the diseases, which constitute the principal factor limiting cultivation and production.

In some British Colonies the greater cultivation of other products such as tea and cacao has gradually taken the place of coffee cultivation and it is noted that, as a consequence, from an exportation of the production of 75,000 bags a century ago, exports have now fallen to an annual average of only 5,000 bags.

The same is true too of Trinidad, which now does not export more than 4,000 bags. In Jamaica the diminution in production is very noticeable, the present average export of 50 to 70 thousand bags being but a pale reflection of the average in the period between 1800 and 1830, when the island was considered as one of the regions of greatest production with an average of 200,000 bags per annum. The replacement of coffee by new products is greatest in the island of Ceylon where the cultivation of tea has completely replaced that of coffee, exports having ceased, though a century ago an annual average of 400,000 bags was exported.

All in all, of all these territories it is in East Africa that the cultivation of and trade in coffee is most prosperous. India has too much to do in combating disease to be able definitely to exploit the product, whilst in general in other colonies, as we have seen, coffee cultivation has been replaced by the more profitable cultivation of other crops.

FRENCH POSSESSIONS.

France offers the most striking example of protection granted to colonial products. The following are the charges which bear on the product from the time it enters the country until it reaches the consumer.

Type of charge	Amount per quintal francs
Customs duties	240,40 frs.
Consumption tax	180,00 »
Import license	100,00 »
Protection of colonial coffees	10,00 »
Statistical	4,80 »

Total . . . 535,20 frs.

to this sum it is necessary to add 8 per cent. *ad valorem*.

These taxes are imposed on coffees of non colonial origin. For those from the colonies the charges are as follows:—

Consumption tax	180 frs.
Special tax	10 "
Total	190 frs.

Thus, apart from the 8 per cent. *ad valorem* duty the colonial coffees have a preference over coffees from elsewhere of 345.20 frs. per quintal.

It may be noted that the tax on coffee alone amounted in 1934 to one tenth of the total customs revenue and that among the duties on imports that on coffee is the most important.

But since coffee pays not only customs duties but also other charges, as we have seen, it results that the total receipts obtained by the treasury from coffee amounted in 1934 to 1,095,000,000 frs. In 1935 they amounted to 977,000,000 frs.

In these circumstances colonial coffee is in a specially favoured situation. But since the French market consumes much coffee and presents opportunity for expansion, and since on the other hand colonial imports only cover, up to the present, between 10 and 12 per cent. of the needs of the mother country (the colonial coffee being almost entirely of the Robusta and Liberia varieties, which require, on account of their poor quality, to be mixed with Arabica in order to be disposed of) the possibility of replacing the product of foreign countries is still rather remote. Indeed, if during a period of five years the quantity of colonial coffees consumed in France were to increase by 100 per cent. rising from 300,000 bags to 600,000 it is evident that only a slight effort of propaganda made by the foreign countries would send up the consumption of their coffees in the same proportion as that of the colonial coffees, given the absolute necessity to use them for mixing. However little these countries may develop commercial skill, their mild coffee cannot, in view of their excellent quality, be eliminated from the market as long as the French colonies do not cultivate the finer varieties.

There is at present only one French colony which is an important coffee producer, namely, Madagascar, for though a part of the French possessions once had an important production of the article it has now been replaced by other crops, whilst in other parts of the possessions coffee has only recently been introduced. The greater part of French colonial production comes from the island, where in 1934 the number of hectares under coffee cultivation amounted to 69,500, the average production during the financial years 1932-33 and 1933-34 amounting to 278,000 bags of coffee. The exports of coffee from Madagascar during the seven years up to 1934 were as follows:—

Year	Bags of 60 kgs.
1928	67,097
1929	46,188
1930	52,270
1931	136,492
1932	202,028
1933	238,775
1934	200,203

Of all the coffee consumed in France, 7.5 per cent. comes from this colony, in its turn representing 68 per cent. of all coffee from the colonies consumed in France.

France grants on the colonial coffees an export premium, established under a decree of 31 May 1931 and which in purpose is to indemnify the producer for the difference between the low selling price of recent times and the cost of production. The funds for this subsidy come from the special tax applied on all coffees, a tax to which we have referred in enumerating the charges borne by all coffees entering France. During the whole of 1931 and the first quarter of 1932 the producers of Madagascar obtained a bounty of two francs per kilogramme. In 1933 the premium was lower and amounted only to 0.45 frs. and during the first half of 1935 it fell to 0.25 frs.

The other colonial territories of France, as we have already noted, either have given up coffee cultivation for that of cotton crops or have only just started to cultivate coffee. At present their production is very low.

In recent years French West Africa, of which the principal producing country is the Ivory Coast, followed by Guinea, Dahomey and Senegal, has developed its production only very slowly, the average exports being 7,500 bags of 60 kgs.

New Caledonia, wher production is gradually increasing sends however to the mother country only an average 10,000 bags. The exports from French Indo-China, which introduced coffee cultivation in 1895, and in 1920 exported 15,000 bags, now do not exceed 4,000 to 5,000 bags. Guadaloupe, where cultivation prospered and, a century ago, 15,000 bags of coffee were produced, a quantity which was maintained, with fluctuations, until 1924-27, has seen its exports fall until at present they only amount to 3,000 to 4,000 bags per annum. In this case the principal reason for the diminution was the cyclone of 1928 which destroyed almost all the plantations. Then comes Martinique, famous in the history of coffee, for from there the production of coffee spread towards the Americas and the Antilles. Production in Martinique reached 100,000 bags of coffee per annum at the time of the French revolution, but at present it only amounts to from 300 to 400 bags. The New Hebrides, where coffee has been cultivated only since the beginning of the twentieth century, export about 4,000 bags. Owing to the small importance of their production and exports, we shall only list the other colonial possessions where the plant is cultivated, namely: the island of Reunion, the French Indian Establishments, of which Pondichery was a large production centre, French Guiana, Togo, and the colonies of French Equatorial Africa.

One French colonial centre, Jibouti, has according to the statistics, an important export of coffee for the figure of exports having increased since 1913, has reached in recent years an average of 225,000 bags of 60 kgs. But in this case it is not only a question of the coffee of French Somaliland, but of large quantities of Abyssinian coffee, for which this port is the necessary exit.

PORTUGUESE POSSESSIONS.

Angola is the only Portuguese colony which produces coffee, but it takes a moderate place among the coffee producers. Exports had already reached

75,000 bags in 1913 and have grown continually since 1920, reaching in the last three harvest years up to 1934 figures fluctuating between 150,000 and 175,000 bags.

BELGIAN CONGO.

Whilst visiting, in 1930, the 110 plantations of this colony, M. KERMANS deplored that the central government did not pay as much attention to the coffee plantations as it did to the cultivation of cotton. This, we repeat, was very recently, in 1930, when not much time had passed since the first significant exports (3,000 bags in 1926) had been made, and when exports equalled 35,000 bags. But Belgian Congo has surprised all the technicians by the considerable progress which it has made in hardly four years. Since 1930 exports have taken the following course:

Year	Exports bags of 60 kgs.
1931	48,630
1932	89,776
1933	138,334
1934	201,667

A great part of this success is due to the Association of Coffee Cultivators of the Belgian Congo which directs everything relating to the cultivation, the industrial transformation and the trade of coffee. The European plantations cultivate for preference the Arabica variety as the most valuable but generally the Robusta variety predominates because it is better adapted to the conditions of the colony and has shown a greater resistance to the diseases and other plant enemies, yielding an abundant production.

Since the needs of the home country are so limited and since, if it is wished to attain a large production, it would be necessary to compete in world markets to dispose of the product, the Association studies other possibilities, seeking to regulate production, which is difficult owing to the great diffusion of the small plantations of the independent native farmers.

OTHER COUNTRIES.

Among other producing countries we may note in South and Central America Peru, Bolivia and Honduras. The first country, which in 1933-34 imported more coffee than it exported, increased its production in the following years, with the result that imports have at present fallen to one tenth of the exports, which in recent years have reached a level of 15,000 bags. The commerce of Bolivia is almost insignificant, but from Honduras, where recently has been established the Institute for the Defence of Coffee, exports averaged 30,000 bags, a figure which might be increased, for the latter body has the intention of encouraging production by assisting the cultivators in the growing and preparation of the product.

The island of Cuba had a period of prosperity around 1850 when it exported approximately 400,000 bags of coffee, but production has since decreased,

being replaced by the cultivation of sugar cane. In 1914 exports had already ceased. The country is a large coffee consumer, and, no longer producing sufficient for itself, imports a considerable quantity which is estimated at an average 200,000 bags per annum. The sugar crisis is now tending to increase the cultivation of coffee and in 1932-33 15,000 bags were exported.

The Philippine Islands reached a maximum export figure of 125,000 bags in 1883. After 1890 the plantations were devastated by insects and at present the country does not export at all and indeed is obliged to have recourse to importation, for the little which it produces is far from sufficient to cover the needs of its consumption.

We may mention finally Hawaii the exports of which on the average fluctuate around 35,000 to 40,000 bgs; the Republic of Liberia, which exports 20,000 bags and which has in its coffee exports one of the main source of its wealth; and one of the West Indian Islands, which by reason of the long period of its cultivation of coffee and by the high quality of the product has always enjoyed a good reputation, namely, Puerto Rico. Well drained soils, the altitude, climate and abundant precipitations are the factors which make of the region one of the best in the world for coffee cultivation. Cultivation began in 1750. A quarter of a century later an export of 100,000 bags was obtained, and exports increased until the end of the last century, when production reached the figure of half a million sacks, which were almost all exported owing to the great demand for the product on all markets. But later the abnormal situation, created by the Spanish American war and by natural adversity, such as a cyclone in 1899 which destroyed a great part of the plantations and another in 1928 which completed the destruction, sent down the exports of Puerto Rican coffee to negligible quantities, only 3,000 sacks being exported in 1930. Though there has been a renewal of production since that date production has not again exceeded the figure of 15,000 sacks exported in 1931.

CONCLUSIONS.

From the outline which we have just given we may draw the following conclusions:

(1) The enormous increase in the area under the cultivation of coffee in the world was certainly caused by the high prices fetched by the product up to 1929, owing to the valorisation artificially maintained by Brazil.

(2) If the figures of world production and consumption are compared, it is observed that there exists a surplus of production which causes congestion and disequilibrium on the market and which originates almost entirely in Brazil.

(3) The policy of holding stocks, followed firstly by Brazil, resulted in an artificial valorisation of coffee, which, in its turn encouraged the cultivation of coffee and the break down of the valorisation scheme.

(4) The new policy of destruction of the surpluses of production brought equilibrium on the market, bringing, for the time being, reasonable prices, which allowed coffee cultivation to be established on a remunerative basis.

(5) The policy of elimination of surplus stocks followed by Brazil and later by other countries cannot continue indefinitely. The means, therefore, must be considered which could establish the cultivation of coffee on more economic foundations. The solution probably lies in concentrating production on the better qualities.

If world consumption continues to grow, it would be better, since there is already over production in the world, to adjust production to consumption by selecting soils and varieties, by eliminating uneconomic plantations and by ceasing to produce the poorer qualities of coffee, thereby making it possible to obtain a fine product, which is still the one that meets the fewest obstacles on the market, rather than to extend cultivation still further to meet the probable increase in consumption, as this would only prolong indefinitely the existence of the surplus stocks.

E. MARTINEZ DE BUJANDA.

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PRODUCTION AND CONSUMPTION OF AND EXTERNAL TRADE IN MEAT IN FRANCE

SUMMARY. — Live stock numbers and production of meat; fluctuations before and after the war. — Variation in meat consumption.

Before the war, France had a relatively well balanced stock breeding industry, directed in part towards the production of meat, in part towards that of milk and in part towards the raising of work animals, the ox holding an important place as draught animal in French agriculture. A certain importance attached to sheep farming in addition to cattle and pig breeding. There was a fairly considerable consumption of meat, in correspondence with the production, both in respect of the total quantity consumed, as well as of the proportion of the various kinds of meat. France exported cattle and beef, and imported sheep and pigs to a somewhat limited extent, and the trade, although not exactly balanced, showed a hardly appreciable deficit. There were signs of some further development, undoubtedly, in the live stock industry, but progress was gradual and without sudden changes of any kind.

Not only was this development of the industry hastened by the war of 1914-18 and by the years that followed, but numerous fluctuations of wide range began in consequence to make their appearance. The French meat market, the production of meat, its consumption and the home trade became extremely liable to disturbance arising out of complex factors which were acting on the general economic position. The disturbances that actually occurred and the consequent general want of equilibrium resulted in a serious crisis in the French production of meat.

This crisis has made clear the necessity for measures of improvement and reorganisation in meat production and the meat market in France.

I. — Live stock numbers and production of meat; fluctuations before and after the war.

GENERAL DEVELOPMENT DURING THE PRE-WAR PERIOD.

The pre-war period was on the whole marked by an increase in live stock numbers in France. Taking into account the very appreciable increase in the live weight of the animals and of the yield in meat, as well as the progress in breeding, it may be roughly calculated that the live stock increase on the eve of the war was one of from 10 to 20 per cent. as compared with 1850-52, while in the same time the human population had increased by 4 per cent. only.

This period was characterised also by a very marked decline in sheep numbers and by an equally marked increase in cattle and pig numbers, to keep exclusively to the kinds of stock more especially used for meat production.

It will be seen later that the supply of horseflesh is also of a certain importance for meat consumption, especially on the Paris market, but this utilisation for slaughter purposes is quite a subsidiary aspect of horse breeding, and in no way influences the course taken by that branch of breeding and its numerical variations.

The general development noted in the numbers of the different kinds of live stock, and more particularly the decrease in the sheep numbers, are due to a familiar transformation of the economic and social conditions of agriculture.

Apart from the variations, already referred to, in the live weight and in the yield in meat, which have together a very decided influence on the actual supply of meat to the market, it should be noted that the census returns of numbers do not always convey an exact idea of the relative importance of the live stock numbers.

The census is, in fact, taken in the course of December. Now, with the progress made in breeding methods and with the development of the consumption it has been found that, especially for sheep and pigs but also for cattle, the slaughtering age has been lowered in the course of the period under review; in particular many of the spring lambs have been killed at eight or nine months, that is to say, before the date of the census taking, whereas formerly these were kept till the following year and accordingly appeared in the census returns.

In addition, the lowering of the slaughtering age involves a much larger replenishment of stock, and hence an increase in the average productivity of herd or flock.

Speaking generally, it may be said that the decline in sheep numbers was much less considerable, from the standpoint of meat production, than would appear from a comparison of the numbers existing at the end of the years 1852, 1882 and 1912, and that the increase in cattle and pig numbers was of considerable importance. In placing the total increase of French live stock available for meat purposes at from 10 to 20 per cent., an understatement is probably made.

RECONSTITUTION OF LIVE STOCK AND DIRECTION GIVEN TO BREEDING IN THE POST-WAR YEARS.

In the course of the war, very considerable losses were experienced in French live stock, in particular in respect of sheep and pigs, where the large proportion of the stock consists of young animals for slaughtering; in the first or second year of the war the losses registered were to be attributed, especially, to the fact that consumption of meat had intensified and outstripped the capacity of the live stock production. It is undoubtedly true, however, that the change in economic and social conditions which had taken place gradually before the war was accelerated, speeded up, so to speak, and thus hastened the decline in sheep farming.

TABLE I. — *Variations in Numbers of the Several Kinds of Live Stock in France between 1852 and 1935.*

	Year 1935 (*) (2)	Recent period (1)			Reconstitution period (1)		
		1934	1933	1929	1928	1926	1920
		(Thousands of head)					
Cattle	15,670	15,704	15,829	15,631	15,005	14,882	13,217
Sheep	9,558	9,571	9,730	10,452	10,445	10,775	9,406
Pigs	7,043	7,044	6,769	6,102	6,017	5,777	4,942
<i>Pro memoria:</i>							
Horses (4)	3,144	3,183	3,232	3,363	3,352	3,342	3,114
Goats	1,316	1,405	1,448	1,885	1,372	1,388	1,341

	War period		Pre-war period (2)			
	1919	1913	1912	1902	1882	1852
	(Thousands of head)					
Cattle	12,374	14,788	14,706	14,929	12,997	11,971
Sheep	9,061	16,131	16,488	20,576	23,809	33,282
Pigs	4,081	7,036	7,172	3) 7,561	7,147	5,240
<i>Pro memoria:</i>						
Horses (4)	2,883	3,776	3,777	3,599	3,484	3,662
Goats	1,175	1,435	1,409	1,532	1,851	1,338

N. B. — The live-stock census takes place every year in December.

(*) Provisional figures. — (1) Includes head of stock in the departments of Haut-Rhin, Bas-Rhin and Moselle. — (2) Not including the number of stock since 1871 of these same departments which counted in 1912, 523 thousand cattle, 46 thousand sheep, 431 thousand pigs, 119 thousand horses and 72 thousand goats. — (3) Year 1903, which marked the maximum number of pigs (about 8 million head counting the three above-mentioned departments). — (4) Horses, mules and asses.

The years which followed immediately on the war were marked by a reconstitution of live stock, relatively limited in scope, however, and with little effect in regard to sheep the numbers of which once more began to decrease from 1927.

With this reserve and that which should also be made in respect of horses and goats, it may be estimated that the French live stock was practically reconstituted by 1928-29.

Index numbers of the live stock returns at the end of 1928 are established as follows in relation to those of 1920 and 1912. For these latter, account has been taken, on the one hand (a) of the numbers only returned as in the boundaries of French territory before the war, and, on the other hand (b) of

the numbers included within the present boundaries, after the re-annexion of the three Alsace-Lorraine departments:

	1920 = 100	1912 = 100	
		(a)	(b)
Cattle	114.3	102.0	98.5
Sheep	111.0	63.4	63.2
Pigs	121.3	83.8	79.1
<i>Weighted average . . .</i>	<i>115</i>	<i>98</i>	<i>94</i>

The weighted average is given simply by way of illustration; it is obtained by means of an approximate calculation only, and cannot therefore have any other significance.

The increase in the index numbers is the more remarkable as it coincides with an increase in slaughterings and a decided decline in imports, a decline amounting to more than 1,800,000 quintals between 1927 and 1928.

The index numbers themselves, which express the comparison between the numbers of live stock in existence at the end of the years under review, give an incomplete picture only of the actual reconstitution of the live stock in France. The observations already made on this subject in respect of the development of the live stock in the period previous to the war may be recalled here, especially for cattle.

It may be observed, in the first place, that the net average weight of the animals brought to the Villette market in Paris was during these years noticeably less than the pre-war average, and that for cattle it continued to decrease since the war, while for pigs there was a slight increase, as shown by the following figures:

	1927	1923	1922	1913	1911
		kg. of net meat on average per head			
Bullocks	325	328	331	409	384
Calves	67	70	72	96	93
Sheep	18	19	18	20	21
Pigs	77	74	74	120	115

An especially large decrease in net weight in comparison with the pre-war figure, one of from 35 to 38 per cent., is to be noted in the case of *pigs*.

This fact points to a somewhat radical transformation of pig breeding which was now directed towards the production of lean meat, and this in turn tended to lower very markedly the slaughtering age of the animals. From 1920 to 1927, however, the weight slightly increased (by about 4 per cent.). It is noted that the proportion of young pigs of less than six months among the total numbers returned at the end of the year has increased as compared with the pre-war proportion, but declined slowly between 1920 and 1926, the percentages being 46.9 in 1913, 49.2 in 1920, 48.9 in 1926 and in 1928. It should further be noted that a large number of these are killed before the census date and hence escape return to an extent decidedly greater than before the war.

The decrease shown on Table II in the pig numbers existing at the end of the year 1928 as compared with the period 1912-13 seems thus not to cor-

respond to an actual decline in the numbers of this branch of live stock farming, still less to a decrease in the supply of pigmeat, in spite of the smaller number of sows (790,000 in 1928, as compared with 907,000 in 1913, or 78.1 per cent. of the earlier figure). From the very fact of the lowering of the slaughtering age, the production has been intensified, has gone on at a more rapid pace, resulting in a more frequent renewal of the full grown stock.

TABLE II. — *Variations in Numbers of Full-grown and Young Pigs.*

Classes	1935 (a)	1934	1933	1932	1931	1930
	Thousands of head					
Boars	40	39	39	39	37	34
Sows	877	884	870	870	814	822
Animals for fattening of 6 months and over	2,604	2,565	2,483	2,384	2,366	2,332
Animals for fattening under 6 months	3,522	3,556	3,377	3,235	3,181	3,141
<i>Total number . . .</i>	<i>7,043</i>	<i>7,044</i>	<i>6,769</i>	<i>6,488</i>	<i>6,398</i>	<i>6,329</i>

Classes	1929	1928	1927	1926	1925	1913 (b)
	Thousands of head					
Boars	34	33	34	33	29	39
Sows	771	790	785	776	709	907
Animals for fattening of 6 months and over	2,265	2,250	2,275	2,143	1,772	2,801
Animals for fattening under 6 months	3,032	2,944	2,926	2,825	2,432	3,290
<i>Total number . . .</i>	<i>6,102</i>	<i>6,017</i>	<i>6,019</i>	<i>5,777</i>	<i>4,942</i>	<i>7,036</i>

(a) Interim figures. — (b) Does not include the departments of Moselle, Haut-Rhin and Bas-Rhin.

Sheep farming seems to have also undergone a similar series of changes. As well as the slight decrease in the average net weight of animals slaughtered, a decrease ranging from 9 to 14 per cent., which indicates a general lowering of the slaughtering age, much less appreciable however than that observed during the years preceding the war, a quite abnormal decrease may be noted in the number of both male and ewe lambs returned at the end of the year; this is almost a 48 per cent. decrease and the proportion in relation to the total animals dropped from 16.1 per cent. in 1913 to 12.3 per cent. in 1928. More clearly still may be noted the relatively very small number of male and ewe lambs of under one year in comparison with the number of ewes; the same may be noted also for wethers of one year old and over, but the latter decrease has not the same significance.

	1926	1920	1913
Number of male and ewe lambs of under one year per 100 ewes	39	39	59
Number of wethers of one year old and over per 100 ewes	20	19	28

It may accordingly be stated that the proportion of lambs of the year, slaughtered before the census return of December, greatly increased (by more than 50 per cent.) as compared with the pre-war years. It may also be observed on Table III that the number of wethers one year old and over and remaining at the end of the year is relatively high in comparison with that of the lambs, male and ewe, returned at the end of the preceding year, the percentages being 71.6 in 1926 as against 64.5 in 1913; from this it may be concluded that the number killed is less than it was before the war. The extent of the decrease is however much less than that of the increase in the killings of the lambs of the years. If it be added that the number of ewes shows a relatively small decrease (20 per cent. only as compared with the figure in 1913), it will be found necessary to correct the impression that is gained from the comparison of the total stock existing at the time of the census taking each year, and to consider, not only that the sheep total has in fact decreased merely by one fifth instead of one third as would seem to be the case, but that the decrease in the production of meat, as from the fold, is still less and is below one fifth, approximately 10 to 15 per cent.

TABLE III. — *Variations in Head of Full-grown and Young Sheep.*

Classes	1935 (1)	1934	1933	1932	1931	1930	1929
Thousands of head							
Rams	191	192	200	207	212	213	244
Ewes of 1 year and over . .	5,976	5,929	5,981	5,980	6,009	6,163	6,087
Wethers of 1 year and over .	998	1,046	1,071	1,137	1,211	1,302	1,545
<i>Total . . .</i>	<i>7,165</i>	<i>7,167</i>	<i>7,252</i>	<i>7,324</i>	<i>7,432</i>	<i>7,678</i>	<i>7,876</i>
Wethers and ewe lambs under 1 year	2,393	2,404	2,477	2,438	2,413	2,474	2,575
<i>Total number . . .</i>	<i>9,558</i>	<i>9,571</i>	<i>9,730</i>	<i>9,762</i>	<i>9,845</i>	<i>10,152</i>	<i>10,452</i>

Classes	1928	1927	1926	1925	1913 (2)	1903
Thousands of head						
Rams	209	214	213	203	294	279
Ewes of 1 year and over	6,503	6,610	6,635	5,818	9,288	9,878
Wethers of 1 year and over	1,271	1,329	1,327	1,085	2,581	3,337
<i>Total . . .</i>	<i>7,983</i>	<i>8,153</i>	<i>8,175</i>	<i>7,106</i>	<i>12,163</i>	<i>13,494</i>
Wethers and ewe lambs under 1 year.	2,461	2,542	2,599	2,301	3,968	4,460
<i>Total number . . .</i>	<i>10,445</i>	<i>10,693</i>	<i>10,775</i>	<i>9,406</i>	<i>16,131</i>	<i>17,954</i>

(1) Interim figures. — (2) The departments of Haut-Rhin, Bas-Rhin and Moselle are not included.

Observations of the same kind might be made in respect of *cattle*, so far as to say that the average net weight of animals placed on the market is less by one fifth for oxen and by one third for calves in comparison with 1913; the slaughtering age has thus been lowered perceptibly.

The effect of this lowering of age becomes cancelled in the determination of live stock numbers because the total volume of slaughtering of national live stock was somewhat reduced in the post-war years; and here we have the main explanation of the fact that, while the number of cows remained up to 1926 distinctly lower than the number in 1913, from 1924 onwards the number of calves and heifers registered at the end of the years was equal to that registered at the end of 1913, and that the young stock of one year old and over had nearly recovered from 1920 onwards their pre-war totals.

TABLE IV. — *Variations in Numbers of Full-grown and Young Cattle.*

Categories	1935 (1)	1934	1933	1932	1931	1930	1929
Absolute numbers (thousands of head)							
Bulls	264	259	261	261	255	246	213
Bullocks	1,297	1,346	1,362	1,373	1,389	1,362	1,318
Cows	8,662	8,653	8,572	8,451	8,274	8,288	8,196
<i>Total . . .</i>	<i>10,223</i>	<i>10,258</i>	<i>10,195</i>	<i>10,085</i>	<i>9,918</i>	<i>9,896</i>	<i>9,727</i>
Young animals of 1 year and over	3,158	3,139	3,192	3,096	3,094	3,049	3,033
Young animals under 1 year.	2,288	2,307	2,443	2,461	2,421	2,522	2,871
<i>Total number . . .</i>	<i>15,670</i>	<i>15,704</i>	<i>15,830</i>	<i>15,643</i>	<i>15,434</i>	<i>15,467</i>	<i>15,631</i>

Classes	1928	1927	1926	1920	1913 (2)	1902	1852
Absolute numbers (thousands of head)							
Bulls	278	266	256	246	284	293	289
Bullocks	1,441	1,444	1,426	1,338	1,843	1,747	1,861
Cows	8,118	7,971	7,701	6,830	7,794	8,318	5,781
<i>Total . . .</i>	<i>9,837</i>	<i>9,681</i>	<i>9,383</i>	<i>8,414</i>	<i>9,921</i>	<i>10,358</i>	<i>7,931</i>
Young animals of 1 year and over	3,116	3,137	3,025	2,830	2,854	2,786	2,162
Young animals under 1 year.	2,052	2,112	2,064	1,973	2,012	1,784	1,817
<i>Total number . . .</i>	<i>15,005</i>	<i>14,941</i>	<i>14,482</i>	<i>13,217</i>	<i>14,788</i>	<i>14,929</i>	<i>11,971</i>

(1) Interim figures. — (2) Does not include the departments of Haut-Rhin, Bas-Rhin and Moselle.

A certain disproportion may however be observed, in comparison with 1913, between the totals of these two classes of young animals, a disproportion which is a very clear index of the direction given to meat production as marked

by the lowering of the slaughtering age. Whereas in 1913 for every 100 calves under one year there were 142 young animals one year old and over, in 1928 the proportion became 152 to 100; it may be further noted that there had been a 9.2 per cent. increase for the young animals of one year old and more, while for animals of less than one year the increase was 2 per cent. only, and that, as compared with the total stock, the proportion rose, in the case of the former class of animals, from 19.3 in 1913 to 20.8 per cent. in 1928, while for the latter class, that of calves, it remained the same as before, 13.6 per cent.

The general course of development in the case of cattle as shown on Table IV moreover presents a much more characteristic feature: the relatively large increase in the number of cows existing at the end of the year and the parallel decrease which is very noticeable in the number of bullocks. This appears clearly from the proportional index figures of the totals of 1928 as compared with those of 1920 and 1913.

This fact may also be expressed in the following way: whereas in 1913 for every 1,000 cows there were 236 bullocks, in 1928 there were only 178 bullocks. This represents a higher proportion of the number of cows in the total head of cattle, a proportion which rose from 52.7 per cent. in 1913 and 51.7 per cent. in 1920, to 54.1 per cent. in 1928, the proportion for bullocks being 12.5 per cent. in 1913, 10.1 in 1920, and in 1928 only 9.6.

	1920 = 100	1913 = 100	
		(a)	(b)
Proportional index numbers for cows	118.9	104.2	100.3
Proportional index numbers for bullocks	107.7	78.2	77.2

(a) Not including in 1913 the three Alsace-Lorraine departments. — (b) Including in 1913 these three departments.

This striking fact is related to the general changes which came about in agricultural economy in the post-war years.

The conclusions that might be drawn from the relative increase in the cow numbers would be more exact if the number of dairy or milch cows could be determined, but a return in this respect was made only in 1925 and 1926 and no comparison is possible with the pre-war years.

	1926	1925
Number of milch cows (thousands)	7,058	7,031
Proportion in relation to the total number of cows (%) . . .	91.7	92.6

The comparison of the two index figures would seem to indicate a diminution in the average productivity per cow, but as based on two years only this conclusion has not sufficient warrant to be regarded as exact for the period considered, the more so that the year 1926 was, as compared with the preceding year, one of less forage production. Speaking generally, it seems however certain that the relative falling off in slaughterings of cows for meat and the tendency to kill younger animals must have the effect of raising the average age of the cows, of reducing the proportion of milch or breeding cows and their

fecundity, and consequently of reducing the average productivity of the herd, thus gradually counterbalancing the contrary effect noted above and still clearly dominant in 1928.

The following general conclusions may serve to summarise the observations already made on the development of live stock numbers in the years which followed the war, and on the situation in this respect in 1927-28.

In 1928, the meat production, reckoned in terms of the animals actually bred, had become *at least* equal to what it was immediately before the war, with a larger proportion of cattle and pigs, a less proportion of sheep; the quantity however placed on the market was smaller, in consequence of the noticeable lowering of the slaughtering age.

The average productivity of the breeding females would seem to have increased in the case of sheep and pigs, so that the tendency to the reduction in stock numbers was balanced in the first case, and the tendency to increase accentuated in the second case, from the standpoint of meat production. With cattle, the lowering of the slaughtering age, the tendency to slaughter relatively young animals for meat, and among fully grown stock rather bullocks than cows, had the direct and immediate effect of increasing the proportion of cows and, to a certain extent, also the productivity of breeding cows; these same factors, however, carried further, must inevitably have an effect the inverse of the former, from the fact of the non-renewal of the stocks of fully grown cows. Although not very noticeable in 1928, this latter effect would seem inevitably to assume certain proportions in the following years.

RECENT PERIOD, FROM 1929 TO 1934.

The general course already noted of the post-war reconstitution period was continued up to 1933-34. The cattle numbers reached their maximum in 1933; sheep numbers declined and pig numbers rose, both almost continuously. In 1933 for cattle, in 1934 for the other kinds, the proportional index figures were as follows in comparison with the corresponding figures of 1928 and 1920.

	1928 = 100	1920 = 100
Proportional index figures of cattle numbers in 1933. . . .	105.4	119.8
Proportional index figures of sheep numbers in 1934. . . .	91.6	105.9
Proportional index figures of pig numbers in 1934	115.4	142.1
<i>Weighted average, in 1934</i>	<i>107</i>	<i>122</i>

The returns of the Villette market show no variation in the average net weight of animals sold since 1927. The examination to be made later of the variations of the stock numbers will show however that very probably there has been a lowering of the slaughtering age for cattle, and a rise in that for sheep and pigs, and that these variations have had an appreciable effect on the numbers returned at the end of each year. At the same time these variations seem to be only slight, and this would explain the fact that the average net weight remains constant in the Villette statistics. The variations, in so far as they exist, go to show that the actual increase of cattle numbers is a little

greater, that of pig numbers somewhat less, and the decrease in sheep numbers somewhat more considerable than the differences in these respects shown by the index figures given above.

There is however a factor which has affected the range of the live stock numbers much more appreciably, *viz.*, the variations in international consumption and in imports from foreign countries involving differences at times very considerable in the volume of the meat supplies drawn yearly from the national live stock.

The fact may be especially clearly seen in the case of cattle, where the increases in the numbers (1932-33) followed directly on a period of lower home consumption of meat and a larger volume of net imports (1930-31), and where inversely the decreases (1930-31 and 1934-33) appeared after years of revival of consumption and of contraction of the net imports (1928-29 and 1932-33). The influence of these factors is so dominant that in the end there is a complete masking of the progress in the production of meat, reckoned in terms of the animals actually bred.

The effect of these factors is much less decisive as regards sheep and pig numbers, the general development of which may be seen through certain fluctuations in detail. The effect although less manifest can, however, be discerned. *Pig numbers* showed relatively little increase in 1931 and 1932, following on the remarkable development of pigmeat consumption in the previous years; the decrease in sheep numbers was somewhat slight in 1932 and 1933 following on the decline in consumption and the increase in net imports observed in 1931.

The increase in the production of pigmeat is especially seen from the trend of the stock numbers.

	1928 = 100
Proportional index figures for sows in 1934	110.6
Proportional index figures for the number of fattened pigs six months old and over in 1934	114.0
Proportional index figures for number of fattened pigs under six months old in 1934	120.8

The most striking fact is the large increase in the number of young pigs under six months old; the proportion of the numbers in this category has increased in the following way since 1928:

	1934	1928	1920
	Percentages		
Proportional index figures for the number of sows in relation to total pig stocks	12.5	13.1	12.5
Proportional index figures for the number of fattened pigs six months old and over	36.4	37.4	35.9
Proportional index figures for the number of animals for fattening under six months old	50.5	49.8	49.2
<i>Total pig stocks</i>	100.0	100.0	100.0

In 1928 there were for every 100 sows 285 pigs for fattening six months old and over and 373 young pigs under six months; in 1934 the proportion had risen to 290 only for the first category, and to 402 for the second. In other

words while in 1928 there were per 1,000 young pigs 764 for fattening six months old and over this proportion had fallen in 1934 to 721.

The conclusion reached is clearly, on the one hand, that the slaughtering age has slightly risen, which would be enough to bring about a return of a larger number of young pigs ; and on the other hand, that the meat production, in the sties, has been less rapid than the increase in consumption, so that the proportion of animals killed has been on the decrease. The slight increase in the average net weight at slaughtering has, besides, had the effect of diminishing the number of animals killed for the same quantity of slaughterhouse products.

Thus, although the production of meat, so to speak, at the source has increased only by 10 per cent., there has resulted a crisis in the actual over-production of pigmeat for pork and other pig products.

The development of *sheep numbers* seems to be the inverse of that of pig numbers if its general decline be considered, but an analogy is to be seen in the tendency to slaughter equally older stock. The proportional index figures of the 1934 numbers in relation to those of 1926, the year which marks the close of the period of stock reconstitution, are in this respect very significant:

Ewes	89.7
Wethers of one year old and over	78.7
Lambs (male and female) under one year	94.2

The number of wethers one year old and over per 1,000 ewes was 176 in 1934 as compared with 200 in 1926, whilst that of lambs under one year old per 1,000 ewes was 405 in 1934 as compared with 392 in 1926.

While at the end of 1926 there were 716 sheep one year old per 1,000 lambs (male and female) remaining at the end of the previous year, this proportion had fallen to 422 per 1,000 in 1934 and is much smaller even than that registered in 1920, *viz.*, 645 per 1,000.

The average slaughtering age has thus again probably risen; although only by a little. There can here be no question of over-production, but the phenomenon observed has effects similar to those observed above for pigs. The decrease in the production of meat, in terms of animals produced in the fold, is perhaps somewhat more marked than would seem to result from the diminished number of ewes, but the actual production of meat for slaughter has certainly not diminished in the same proportion.

The increase in the proportion of the number of ewes relatively to the number of wethers, and the relatively large proportion of young animals are alike indications of a tendency in sheep farming, which may at any time be reversed, but which, as at present appears, has the effect of checking, from the standpoint of meat production, the decline in sheep numbers.

As already remarked, it is almost impossible to supply precise statistics on the development of *cattle numbers* and the production of beef, owing to the predominating influence on the stocks of the home consumption and of imports.

The proportional index figures for the 1934 stocks as compared with those of the previous years are proof of fluctuations to an extent at times considerable

which are explicable only by the relatively large differences in the net supplies (slaughterings *plus* net imports) for consumption:

	1931 = 100	1929 = 100	1928 = 100
Bullocks	97.6	102.6	93.4
Cows	104.6	105.6	106.6
Young animals one year old and over	101.5	103.5	100.1
Young animals under one year	95.6	83.6	112.4

Although the general development of this branch of stock breeding cannot for this reason be clearly determined from the index figures, certain fairly characteristic statements do result from these figures.

It may first be noted that, since 1929 at least, the proportion of young stock of under one year has not ceased to diminish as compared with the total stock numbers, the percentages being 14.7 in 1934, 15.7 in 1933 and 18.4 in 1929, and that the proportion of young stock one year old and over has on the contrary increased, 20.2 per cent. in 1933 as compared with 19.4 per cent. in 1929. The opposite, it is true, had occurred and in a much more marked way, in 1929, the percentages for 1928 being 13.6 for the one class and 20.8 for the other; this appears however to have been the result of internal causes as already indicated and does not prevent the conclusion being reached that the average slaughtering age has been lowered in the course of the period considered, and that the tendency already observed in the previous period is thus maintained.

Further, while the number of bullocks declined sharply in 1929, it then increased up to 1931 and since then has slightly decreased, the increase in the number of cows is nearly continuous and even constant, and this is the clearest fact lending itself to registration.

The proportion of the number of cows in the total head of stock rose from 54.1 per cent. in 1928 to 55.1 per cent. in 1930, after having dropped to 52.4 per cent. in 1929; from that year onwards the advance was continuous. In 1934 a proportion of 155 bullocks per 1,000 cows was found as compared with 178 in 1928.

On the whole, the development of stock numbers and of the production of beef seems to have followed the same course as in the former period 1920 to 1928.

It is however difficult to determine to what extent the production of meat at the source has increased, since no data are available as to the number of milch cows and still less on their productivity. The only factor at hand, showing for 1931 a relatively abundant milk production, cannot lead to any clear conclusion, since the general conditions and in particular the forage production were in that year particularly good.

The increase in meat production, in terms of the animals actually bred, appears to have been, in fact, more rapid than the internal consumption. The result has been since 1931, in spite of the lowering of the slaughtering age and the marked contraction of imports, a crisis of over-production, especially marked in the case of calves.

Speaking generally, and as summarising the preceding observations, a quite perceptible increase of the total production of meat, in terms of animals bred,

should be noted in the course of the period considered, and an increase at least as marked in the actual supply for slaughtering. This increase has been nearly continuous and the fluctuations in consumption and in imports should normally determine considerable changes in the stocks and general conditions of the breeding. In 1933 and 1934, it was distinctly noted that the actual production appreciably exceeded the requirements of a consumption which had none the less increased.

SITUATION IN 1935.

Provisional statistics for 1935 show a stabilisation of numbers of stock and of meat production.

This stabilisation is characterised, not only by the stationary position of all kinds of stock as regards numbers, but, in cattle, by the very small increase in the number of cows and the relatively very slight reduction of the number of young animals under one year; in sheep, by the increase in the number of ewes (nearly 8 per cent. increase); in pigs by the very slight decrease in the number of sows, and the relatively small variations in the number of animals for fattening.

It may be of interest to consider side by side with the development of meat production, the trend of the national production of crops, etc. utilisable for live stock feed.

In the first place an appreciable increase is to be noticed in the extent of land devoted to forage crops.

	1934	1930	1923	1920	1913
		(thousands of hectares)			
Tubers and roots	1,334	1,299	1,075	1,037	1,112
Annual green forage	716	738	714	691	781
Sown and permanent grasslands	3,512	3,349	3,262	3,089	3,310
Natural meadows, grazing land, etc. . .	12,027	11,213	10,934	10,877	10,084
<i>Total . . .</i>	<i>17,579</i>	<i>16,599</i>	<i>15,985</i>	<i>15,694</i>	<i>15,287</i>

Forage production has consequently increased in the post-war years, but in a much smaller proportion; as a whole in recent years a production slightly in excess of the pre-war has been attained.

In addition the production of cereals utilised as stock feed, rye, barley, oats and maize, and that of potatoes have slightly increased since the war. Although there are no exact statistics in the matter available there can be no doubt that the quantity of bran yielded has diminished, as also that of straw.

On the whole it may be reckoned that the quantity of soil products utilisable as stock feed and obtained in the country has undergone a slight increase since the war, for instance, comparing the averages of 1924-28 and 1929-33, and considering that the quantity has been taken as a whole from 1927-28 onwards somewhat higher than it was before the war.

On the other hand, and although no precise statistics are available, the development of the sugar refining and the brewing industries has undoubtedly brought about an increase in the national production of brewers' grains, beet pulp, molasses used as stock feeds.

In 1934, as a result of the crisis of over-production in meat, the area under forage crops remained nearly stationary with a slight diminution in 1935.

Although the course of foreign trade movements has been mainly determined by the variations in the price of meat on the national market, and although the object of the Government measures has been to protect national production rather than to increase it with a view to exclusive self-supply, it may be of some interest to indicate in parallel manner the course of the trade in feeding stuffs. The net imports (+) or net exports (—) are given below, with the addition, on the basis of some calculations that have been made, of the production of cake resulting from the transformation of imported oil-seeds:

	1935	1934	1933	1932	Average 1929-1933
	(thousands of quintals)				
<i>Concentrated or prepared feeds:</i>					
Oil cakes exported (net export)	— 1,322	— 394	— 502	— 1,308	— 1,125
Maize cakes, brewers' grains and beet pulp	— 79	+ 304	+ 309	— 4,397	— 56
Molasses for stock	+ 60	+ 120	+ 272	+ 38	+ 251
Smoked meat for stock	+ 10	+ 7	+ 7	— 1	— 1

Soil Products:

Fodder cereals: oats, barley, rye, maize	+ 8,119	+ 8,026	+ 9,978	+ 15,404	+ 12,737
Broken rice	+ 822	+ 1,404	+ 1,490	+ 748	+ 871
Bran and forage	— 1,428	— 966	— 1,305	— 1,008	— 1,360
Potatoes, other than early potatoes	+ 10	— 85	— 118	+ 1,956	+ 1,263
Potato flakes for stock	—	—	—	+ 2	+ 2

	1928	1924	Average 1924-1927	1920	Average 1911-1913
	(thousands of quintals)				

Concentrated or prepared feeds:

Oil cakes exported (net export)	— 1,635	— 825	— 1,074	— 367	— 840
Maize cakes, brewers' grains and beet pulp	+ 304	+ 39	+ 165	+ 50	+ 530
Molasses for stock	+ 129	—	+ 26	—	—
Smoked meat for stock	+ 2	+ 1	—	—	—

Soil Products:

Fodder cereals: oats, barley, rye, maize	+ 7,358	+ 7,508	+ 7,586	+ 10,864	+ 13,193
Broken rice	+ 619	+ 678	+ 766	+ 142	+ 408
Bran and forage	— 2,550	— 4,269	— 2,897	+ 375	— 486
Potatoes, other than early potatoes	— 151	— 1,502	— 554	— 1,745	+ 500
Potato flakes for stock	—	—	—	—	—

The increase in the imports of maize and other cakes, brewers' grains, pulps and molasses is the more characteristic from the fact of a parallel increase of the national production coming from the sugar refining industry and the manufacture of beer, so that the home consumption of these stock feeds has certainly increased. The case is the same for the production of oil cakes, the net export of which has decreased while the production has probably increased (the quantity of oil seeds and fruits produced in France rose from 9,500,000 quintals in the years 1923 to 1928 to 11,500,000 quintals in the following years, it was 13,500,000 in 1933 and 13,100,000 quintals in 1934).

On the other hand, even taking into account on the one hand the fact that there were crop shortages in 1930 which in part explains the large imports of 1931, and, on the other hand, the fact that the net exports of bran, forage and potatoes have decreased, the importance of the net imports of fodder cereals and of broken rice, in recent years.

Taking everything into account, it may be said that, up to 1934 inclusive, in proportion as the national production of meat developed, French stock breeders found themselves increasingly dependent of foreign supplies for live stock feeds, to an extent if not considerable, at least noticeable, and this in spite of the extension, noted earlier, of forage crops and grasslands.

This factor has undoubtedly contributed to bringing about the crisis which has characterised meat production in France in these last years, but it should be emphasised that it is in no way the direct consequence of the measures taken by the Government, since these were limited up to 1934 to the protection of the home market and did not deal with the actual production of meat.

The very marked change which occurred in 1935, and of which there were some signs in 1934, is connected, on the one hand, with the abundant crops of cereals and forage; on the other with the course of the crisis in stock breeding which led the stock farmers to reduce their purchases of concentrated feeds. The exactness of this statement may be verified and it should be brought into relation with the other factors which in 1935 characterised the French meat market; increased national production of slaughtered meats, reversal of the balance of foreign trade leaving a slight credit balance, a check in the progress of live stock numbers and especially in the increase in cattle and pig numbers.

II. — Variations in meat consumption.

The extent of meat consumption in France may be determined by means of the particulars supplied by slaughtering statistics, that is to say partly by the direct returns of the municipal abattoirs, and partly by calculations based on the yield of the slaughtering tax. The former are more reliable than the latter, but are much less complete and refer only to rather more than one third of the total consumption taxed, or 35 per cent. on an average; the calculations made for the total consumption make it possible, moreover, to distinguish the supplies from foreign sources and the home killed meat.

In either case, these figures relate only to "commercial" consumption, or more exactly to the volume of meat placed on the market. The consumption

of meat on the farm, if negligible in the case of cattle and sheep, is comparatively large in the case of pigmeat: in certain regions it attains ten and even twenty kilogrammes per capita and per annum for the rural population, and thus may represent for the whole of France a tenth, if not more, of the commercial consumption of pigmeat.

With these reserves, it is possible by means of the slaughtering statistics to determine with satisfactory precision the relative extent of the consumption and its fluctuations, but the figures have been established only since 1927 and 1928.

In order to form an idea of the variations in consumption as compared with the preceding years, recourse may be had to the statistics of the city of Paris, the consumption of which represents a seventh of French consumption.

Before the war, these statistics included returns of the quantities leaving the abattoirs for Paris and also of the total quantities brought in directly by road or rail; the extent of consumption of the capital and its surroundings (department of Seine) was thus determined. Since the war, the quantities brought in by the gates or by rail are no longer returned; the statistics of the distributing markets distinguish the output of the Parisian abattoirs from the supplies from other sources, but the returns of the Halles Centrales make no distinction.

Any comparison between the period which preceded and that which followed the war can, accordingly, be made only on quite general lines. The variations in the post-war consumption can also only be followed approximately.

With this reserve, it will be noted that in the ten pre-war years, consumption in Paris maintained a fairly constant level, a little over 2,000,000 quintals, or 70 kg. per capita (not taking account of horseflesh to a volume of 114,000 quintals in 1909-1913), with a minimum in 1911 of 1,919,000 quintals, and a maximum in 1913 of 2,031,000 quintals.

The proportion of pigmeat entering into this consumption has increased fairly regularly from 18.5 per cent. (358,000 quintals) in 1904 to 20.4 per cent. (408,000 quintals) in 1910, subsequently slightly decreasing in 1912 and 1913 (19.5 per cent.); the consumption of pigmeat was larger during the years 1909 to 1913 than during the preceding years, by about 4 per cent. On the other hand, consumption of mutton underwent a marked and fairly regular decline, which may be placed at about 4 per cent. Consumption of beef and veal remained very nearly constant.

Although it is impossible for the reasons indicated above to determine precisely even for Paris the relative extent of the consumption in the post-war period as compared with what it was before the war, it may none the less be stated that it was smaller at least up to 1933 and perhaps up to 1934. The average of arrivals on the Villette market and of direct consignments to the abattoirs of Villette and Vaugirard, deducting the re-consignments to the provinces and abroad, remained decidedly lower for sheep during the whole post-war period; it was quite perceptibly lower for pigs up to 1929 and even up to 1930; for cattle, a slight increase in arrivals of fully grown animals and a decrease for calves is noted. For these latter as for pigs, account must be

taken of the marked decrease in net weight of the animals sold, so that on the whole a reduction took place in consumption for all kinds of meats, very noticeable for mutton, appreciable for beef and veal, very marked for pigmeat.

The figures of the output of meats of various kinds from the abattoirs for delivery in Paris confirm these observations which remain exact even if account is taken of the increased importance of the arrivals of slaughtered meat at the central Halles, on the distributing markets and with the retail butchers, as well of direct purchases of live animals by these latter.

Roughly speaking, it appears to result from the different elements available for judgment, that the average consumption of Paris and of its suburbs during the period from 1922 to 1933 inclusive was lower by one fifth than that before the war. In 1934 and 1935 only, it appears to have recovered to somewhat the same extent, possibly to an even larger.

If the course of meat consumption in Paris during the post-war years is surveyed, taking as basis the same factors as before, very considerable fluctuations will be noted from one year to the next, alike for total volume and for the proportion of the various kinds of meat.

In a general way the total meat consumption has been certainly greater on the average for the period 1929 to 1933 than during the preceding period, but the increase is very difficult to assess in figures; roughly speaking, it would seem possible to estimate it at 10 to 15 per cent., taking as a basis on the one hand the total arrivals at the Villette market and the direct consignments to the abattoirs with deduction of the re-consignments to the provinces and, on the other hand the quantities leaving the abattoirs for Paris, the direct consignments to the distributing markets and the arrivals at the central Halles.

The consumption of the various kinds of meat has undergone still greater fluctuations than the total consumption, and it will be seen that up to 1927 inclusive, the variations for beef and veal are noticeably the inverse of those for mutton and pigmeat. Generally speaking, it may be observed that the consumption of mutton has neither increased nor diminished appreciably, while that of pork increased considerably in 1924-25 and then showed a marked decline in the following years falling in 1927 to the level of 1922-23. The consumption of beef and that of veal follow noticeably parallel courses, but it is observed that the consumption of beef has increased more noticeably than that of veal; the 1927-28 consumption exceeded by nearly one fifth that of 1921-23, after having been smaller in 1924-25, and the increase has been only half as large as for veal.

In view of the fact that for the period from 1927 to 1935 the slaughtering statistics show a general parallelism between the trend of the meat consumption of Paris and that of the consumption of France as a whole, it may be concluded that the preceding observations apply, at least approximately, to the total consumption in France.

From 1927 onwards, the meat consumption may be established in a much more precise manner, as already stated previously.

TABLE V. — *Slaughterings: Production and Taxed Consumption of Meat.*1. — *Slaughterings in 31 municipal abattoirs.*

	1 Octobre - 30 September seasons							
	1934-35	1933-34	1932-33	1931-32	1930-31	1929-30	1928-29	Average 1928-29 1932-33
	Thousands of head							
Full-grown cattle	766	749	695	614	573	683	748	663
Calves	944	937	878	815	754	812	876	827
Sheep	2,267	2,332	2,510	2,424	2,173	2,458	2,606	2,434
Pigs	1,526	1,347	1,255	1,371	1,265	1,091	1,119	1,220
Horses	106	112	117	116	128	123	108	118
	Thousands of quintals							
Total of meat slaughtered	5,473	5,366	5,139	21,853	4,570	4,889	5,010	4,890

2. — *Commercial production and taxed consumption in the whole of France.*

	Years								
	1935	1934	1933	1932	1931	1930	1929	Average 1929- 1933	1927
	Thousands of quintals								
<i>Beef and veal:</i>									
Slaughtering tax having been paid:									
Beef	6,390	6,240	6,030	5,460	5,170	5,970	6,400	5,806	5,500
Veal	3,140	3,080	2,970	2,720	2,460	2,520	2,680	2,674	2,490
Imported (1)	130	140	200	270	600	350	90	302	500
Total	9,660	9,460	9,220	8,450	8,230	8,840	9,170	8,782	8,490
<i>Mutton and lamb:</i>									
Slaughtering tax having been paid	860	870	970	970	870	960	990	952	1,000
Imported (1)	80	90	90	100	190	140	100	124	140
Total	940	960	1,060	1,070	1,060	1,100	1,090	1,076	1,140
<i>Pigmeat:</i>									
Slaughtering tax having been paid	4,170	3,810	3,520	3,630	3,610	3,100	3,630	3,378	2,500
Imported (1)	—	20	80	90	150	240	110	134	460
Total	4,170	3,830	3,600	3,720	3,760	3,340	3,140	3,512	2,960
<i>Horseflesh</i>	470	480	520	490	560	550	510	526	400
<i>Total quantity of meat:</i>									
Having paid the slaugh- tering tax	15,030	14,480	14,030	13,270	12,670	13,100	13,610	13,336	11,890
Imported (1)	210	250	370	460	940	730	300	560	1,100
Total taxed consumption	15,240	14,730	14,400	13,730	13,610	13,830	13,910	13,896	12,990

(1) Slaughtered meat, not including preserved meat.

The first observation to be made in connection with Table V is that the variations of the consumption are in direct and fairly close relation with the price fluctuations. The diminished consumption in the years 1929 to 1931 followed on the price rises registered in 1929-1930; inversely the increased consumption in 1932 corresponds to a general and continuous fall in market prices during 1931. In the first case it may be said that the price rise was the cause of the decline in consumption; in the second case the effect was reciprocal; the meat market was embarrassed by the fact of the lower consumption, the more so that, as will be seen later, the rise in prices encouraged importation of cattle and of meat from abroad; the supply exceeded the demand and brought about a relatively marked decline in prices, by comparison with those of other food stuffs; this in its turn led to a recovery in consumption of meat. There may be said to have been full play of the law of supply and demand on the meat market.

This observation will appear to be still better founded if attention is turned to the cattle market in particular, taking as criterion the price per kg. of net meat of second quality on the market of Villette:

	1930-1934	1928-1930	1926-1928
Beef and Veal:			
Variation of annual average prices:			
beef	— 50.0 %	+ 42.3 %	— 9.5 %
veal	— 43.0 %	+ 42.1 %	— 8.0 %
	1931-1935	1929-1931	1927-1929
Variation in annual consumption:			
total beef and veal	+ 17.4 %	— 10.3 %	+ 8.0 %
beef	+ 16.0 %	— 18.0 %	+ 11.0 %
veal	+ 20.0 %	— 6.0 %	+ 5.0 %

The relation is less clear for mutton, as the decline in sheep farming and the extent of the supplies from abroad constitute disturbing factors. It may however be observed that the 7 per cent. decrease as reported in consumption between 1927 and 1931 was parallel to a rise of nearly 24 per cent. on the prices between 1927 and 1930; from 1930 to 1932 prices declined very considerably and consumption remained constant but a slight rise of prices in 1933 was enough to make consumption decline at once by more than 10 per cent. in 1934, in spite of the slight drop in prices registered in that year.

The fluctuations registered in the prices of pig meat between 1927 and 1930 had no marked influence on consumption, although the perceptible rise of 15 per cent. which occurred in 1929 may perhaps have limited the development of consumption. In any case, it is noted that to a 6 per cent. fall in prices in 1930 there corresponds an expansion of consumption of a little over 6 per cent., and that to the more considerable rise of 24 per cent. on prices in 1931 there corresponds a fresh expansion of nearly 13 per cent. in consumption. When prices rose again slightly in 1932 and 1933, consumption declined slight-

ly, and then recovered by nearly 16 per cent. in 1934 and 1935 when prices fell by 32 and 33 per cent. on the market.

The development of the consumption of the various kinds of meat in the period from 1927 to 1935 shows—and this is fairly normal in view of conditions of production—that the proportion of mutton and pigmeat increased very decidedly during the years of less consumption, diminishing as soon as consumption again expanded; the same observation might be made for horseflesh, but here the facts relate to the lower price of this meat at a time when other meats were dear.

It is of more interest however to bring out clearly the general trend of the consumption which is shown by the proportional index figures of the different kinds of meat in the total consumption.

	1935	1934	1933	1929	Average (1) 1929-1933	1927
			(Percentages)			
Beef and veal	63.4	64.2	64.0	65.9	63.2	65.4
Mutton and lamb	6.2	6.5	7.3	(2) 7.8	7.7	8.8
Pigmeat	27.4	26.0	25.0	22.5	25.3	22.8
Horseflesh	3.1	3.3	3.7	3.7	3.8	3.1
<i>Total consumption . . .</i>	<i>100.0</i>	<i>100.0</i>	<i>100.0</i>	<i>100.0</i>	<i>100.0</i>	<i>100.0</i>

(1) The year 1931-32 of low consumption and large imports was exceptional in character and somewhat abnormal, as appears in the average. — (2) 8.0 % in 1930.

The decrease in consumption was very appreciable for mutton, while the consumption of pigmeat showed in comparison an increase nearly continuous and very marked. The lowered percentage for beef and veal is also somewhat remarkable, but inversely to what occurred in the previous period, the increase appears to be specially noticeable for veal, while it is almost nil for beef. The proportional index figures are falsified in this connection by the inclusion of imports, given without distinction, but it may be noted that the greater part, if not nearly the whole, of the imports consist of beef or veal. The difference in the proportion of imports between two import years, 1935 (or 1934) and 1929 is very small. Imported meat entered to the extent of 1 per cent. into beef and veal consumption of 1929, and to that of 1.3 per cent. in 1935. Hence the previous statement receives confirmation: the increase is more than 17 per cent. for veal, and is nearly nil for beef (0.5 per cent. at most in 1935).

The trend of consumption being thus determined, it may be observed that the consumption of the large urban centres included in the statistics of the 31 municipal abattoirs has undergone much greater fluctuations than those of the less important urban centres and of the rural areas. The comparison of the two parts 1 and 2 of the Table V given above should be made with discretion, as on the one hand, the first part does not take account of the imports and on the other hand the figures shown do not always represent the consumption of the town where the animals were slaughtered, as for example in Paris.

If the proportional variations in the slaughterings are compared for 1929 and 1935, years of relatively so small importation as to be negligible, the following results are obtained:

	31 municipal abattoirs	Whole of France
Beef	+ 2.4 %	— 0.2 %
Veal	+ 7.8 %	+ 17.2 %
Mutton	— 13.0 %	— 13.1 %
Pigmeat	+ 36.4 %	+ 37.7 %
Horseflesh	— 1.8 %	— 7.8 %
<i>Total slaughterings . . .</i>	<i>+ 9.2 %</i>	<i>+ 9.6 %</i>

Summarising the observations already made, with the object of indicating the general trend of meat consumption in France, it may be said, that while fairly constant in the pre-war period, it was noticeably less in the years following the war, that it showed a tendency to increase along with the reconstitution of live stock numbers, but that the price rise brought about a fairly appreciable decline in 1931, a decline which in its turn resulted in a relatively considerable price fall, and by reaction, a recovery in consumption which returned in 1934 or at least in 1935 to nearly the level of 1909-1913.

The consumption of pigmeat has acquired since the war a relatively large importance and is increasing gradually as compared with that of butcher's meat, but up to 1930-31 it remained lower than it was before the war in the years 1909 to 1913.

The consumption of mutton has greatly decreased in the proportion of 40 per cent. as compared with the pre-war consumption, taking only the average consumption from 1929 to 1933; in the last two years 1934 and 1935 there has been a very marked decrease.

The consumption of beef has been characterised in the post-war period by very marked fluctuations; it declined by 16 per cent. between 1929 and 1931, then increased by 25 per cent. up to 1935, thus regaining the extent it had before the war.

The consumption of veal underwent only slight variations up to 1931, and remained nearly at the pre-war level, but since then, under the effect of the fall in prices, it tends to assume an increasing importance, and in 1935 constituted one third of the consumption of all meat derived from cattle and one fifth of the total consumption.

The average per capita consumption might be established as follows:

	1935	1934	1933	1931	1929	Average 1929-1933	1927
	(kilogrammes)						
Beef and veal	23.0	22.6	22.0	19.7	22.2	21.2	20.7
Mutton and lamb	2.24	2.29	2.53	2.53	2.64	2.58	2.78
Pigmeat	9.93	9.13	8.60	8.98	7.62	8.41	7.23
Horseflesh	1.12	1.14	1.24	1.34	1.24	1.26	0.98
<i>All meat . . .</i>	<i>36.3</i>	<i>35.1</i>	<i>34.4</i>	<i>32.5</i>	<i>33.7</i>	<i>33.3</i>	<i>31.7</i>

It may well be repeated here what has been said previously, *viz.*, it is "commercial" consumption alone that is in question, and that there is a quite appreciable family consumption of pork and other pigmeat, representing approximately at least half of that here shown, so that the actual total consumption would attain or exceed 40 kg. per capita in 1935.

Even so this average consumption appears to be much lower than that of Paris, and it may be said that the provinces consume per capita less by nearly half than the capital; speaking more exactly the consumption of the rural districts is less in the same proportion than that of the towns.

P. DE VIGUERIE.

HAIL INSURANCE IN ITALY

CONTENTS: Societies or companies dealing with this branch of insurance in 1935. Agreements between these societies — The insurance contract — Regulation of insurance societies — Non-compensation for losses under a certain limit. — Resolution taken in 1935 by the Corporation of Insurance and Credit (*Corporazione di Previdenza e credito*). — The meteorological problem — Statistics on the activity of these societies.

In 1935 there were operating in Italy in this branch of insurance 20 ordinary share companies and co-operative societies and 4 mutual insurance societies(1).

In addition to these undertakings there were in 1932 some thirty associations dealing with hail insurance and of an exclusively local character. These were small societies of co-operative or mutual type, operating either by the terms of their constitution or in actual fact, within a limited area, the annual receipts of which in premiums or additional payments were not to exceed normally 30,000 liras for each branch and 100,000 liras for the whole of the branches operated taken together (2). As will be seen later, important modifications have been introduced into this form of hail insurance by recent legislative measures. In 1932 there were about thirty of these societies undertaking hail insurance (1).

(1) The following is the list of these organisations as given in the *Annuario Italiano delle Imprese Assicuratrici* issued by the "Federazione Nazionale Fascista Imprese Assicuratrici", 1935.

Ordinary Share Companies or Co-operative Societies:

- "Alleanza Securitas Esperia." Rome (1915), cap. 8,550,000 liras (6,000,000 paid up).
- "Anonima di Torino." Turin (1833), cap. 18,000,000 liras (12,000,000 paid up).
- "Anonima generale di assicurazioni." Milan (1907), cap. 5,000,000 liras (3,250,000 paid up).
- "Anonima generale di assicurazioni." Milan (1907), cap. 5,000,000 liras (3,250,000 paid up).
- (In 1934 this company incorporated the "Aurora").
- "Anonima grandine." Milan (1890), cap. 6,000,000 liras (fully paid up).
- "Assicurazioni d'Italia." Rome (1923), cap. 15,000,000 liras (fully paid up).
- "Cassa generale di assicurazioni." Milan (1911), cap. 1,239,000 liras (fully paid up).
- "Compagnia di assicurazioni di Milano." Milan (1825), cap. 64,000,000 liras (fully paid up).
- "La Fenice di Venezia." Venice (1913) cap. 1,000,000 liras (750,000 paid up).

The first company to operate hail insurance in Italy was the " Società di compensi vicendevoli contro i danni della grandine " founded at Milan in 1827. By the rules of this company two classes of products and two zones were established: plain and hill. The premiums for cereals, mulberry leaves and meadows were fixed at 1.50 for the plain and 2 per cent. for the hill country: for the products more liable to damage from hail storms, the premiums were fixed at 3 and 4 per cent. respectively: to these premiums an additional charge was made of 0.50 per cent. for administrative costs.

This company, which did not prosper, was succeeded in Lombardy by the " Assicurazioni generali di Venezia " which in 1836 made a beginning in this branch of insurance in Lombardian Venetia, and was followed in 1853 by the " Riunione adriatica di sicurtà. " These societies soon after extended their activities to other Italian regions. In 1857 there appeared in Milan the " Società di mutuo soccorso contro i danni della grandine per le provincie lombarde, " which took an important place in the activity of Italian hail insurance societies.

In Piedmont the " Società generale e reciproca contro i danni della gragnuola " had as early as 1830 received authorisation from the King to exercise this branch of insurance. This society however was wound up before the end of the first half of the century.

In 1855 an attempt in the direction of public hail insurance was undertaken in the Grand Duchy of Modena. The government advanced to a private com-

" L'Italia. " Milan (1904), cap. 4,500,000 liras (3,500,000 paid up).

" La Pace. " Milan (1919), cap. 10,000,000 liras (fully paid up).

" La Prudenza. " Milan (1920), cap. 2,250,400 liras (fully paid up).

" La Terra. " Milan (1919), cap. 2,000,000 liras (fully paid up).

" La Vittoria. " Rome (1912) cap. 5,000,000 liras (2,922,110 paid up).

" Reale grandine. " Bologna (1891), cap. 2,250,000 liras (fully paid up).

" Riunione Adriatica di Sicurtà. " Trieste (1838) cap. 100,000,000 liras (50,000,000 paid up).

" Società Cattolica d'assicurazione. " Verona (1895) cap. 2,349,165 liras (fully paid up).

" Unione interprovinciale agricola. " Cremona (1893), cap. 373,600 liras (80,840 paid up).

Mutual Insurance Societies:

" Mutue riunite di assicurazione grandine. " Milan (1934). (Result of amalgamation of the " Mutua agraria grandine " and of the " Vercellese ").

" Padana grandine. " Milan (1915).

" Società reale mutua di assicurazioni. " Turin (1828).

" Vecchia mutua grandine ed Uguaglianza. " Milan (1934). (Result of amalgamation of the two societies of which the names figure in that of the new society).

Foreign Companies:

" L'Abeille grandine. " Paris, Milan, cap. 4,800,000 francs (fully paid up).

" L'Union. " Paris, Genoa, cap. 50,000,000 francs (fully paid up).

" Sun Insurance Office. " London, Milan, cap. £ 2,400,000 (£ 600,000 paid up).

(2) ACERBO G. *La cooperazione agraria in Italia* 1932 p. 55. *Gli Istituti e le Imprese di Assicurazione in Italia.* Ministero delle Corporazioni 1934, p. 90.

(3) *L'assicurazione.* *Quindicinale di tecnica, cronaca e giurisprudenza assicurativa.* Rome, 1-15 January 1935.

pany the funds necessary for the compensation payments and for the administrative expenses and recouped itself out of the receipts of the land tax. On the incorporation of the Grand Duchy into the Kingdom, the operations of the Modena company came completely to an end (1). During the period 1894 to 1907 this branch of insurance was operated by 36 companies or societies, as follows: 4 national and foreign share companies, 19 co-operative societies and 12 mutual insurance societies. Among these institutions 10 co-operative societies and 6 mutual insurance societies ceased operations during this period either completely or in respect of the hail insurance branch (2). In 1924 operations were effected by 28 national and two foreign institutions (3). In 1935, as already shown, this branch of insurance was operated by 24 companies or societies including three foreign companies.

Since 17 February 1926 a consortium (*Consortio italiano grandine*) existed between nine of these institutions, with headquarters at Milan; the object of this body was reciprocal interchange of insurances relating to products subject to heavy risks. This consortium also deals with the study of problems which have reference to the industry of hail insurances. The following companies or societies form part of this organisation: Anonima grandine, Assicurazioni d'Italia, Compagnia di assicurazioni di Milano, Italica, Mutue riunite di assicurazione grandine, Reale grandine, Riunione adriatica di sicurtà, Società cattolica di assicurazione and the Vecchia mutua grandine ed Eguaglianza.

On 28 December 1933, an agreement (*concordato italiano grandine*) was signed by 22 hail insurance institutions, the object in view being the possibility of applying the premium rates which are strictly necessary for a sound exercise of this branch of insurance, such end to be effected by an establishment of tariffs on scientific principles and by a reduction in costs, all without encroachment on the principle of free competition. The following companies or societies subscribed to the agreement: Abeille-grandine, Alleanza Securitas Esperia, Anonima grandine Assicurazioni d'Italia, Aurora, Cassa generale di assicurazioni, Compagnia anonima di Torino, Compagnia di assicurazioni di Milano, Italian Excess, Italica, Mutue riunite di assicurazione grandine, Pace, Prudenza, Reale grandine, Reale mutua, Riunione adriatica di sicurtà, Società cattolica di assicurazione, Sun, Terra Union, Vecchia mutua grandine ed Uguaglianza, Vittoria.

Some account will be given later of the agreement reached between the Fascist Farmers' Confederation and the National Hail Syndicate of the National Fascist Federation of Insurance Undertakings, in relation to certain conditions of the policies and in particular to the limit of damages below which compensation is not given.

The insurance contract in respect of hail insurances and in general for insurances against losses is regulated by articles 417-422 of the Commercial Code

(1) PORRI V. Lo sviluppo delle imprese assicuratrici in Italia nei rami elementari, Torino 1928, pp. 100 et seq. Rocca G. Assicurazione privata e sociale, Milano 1934, p. 177.

(2) CAVALIERI E. Le assicurazioni contro i danni della grandine. Relazione al Consiglio della Previdenza e delle assicurazioni sociali. Appendice, Roma 1909, p. 201.

(3) Gli Istituti e le Imprese di assicurazioni private in Italia nel 1925.

in which are contained general provisions relating to the insurance contract, and also by articles 423-448 of the same Code which relate particularly to insurances against loss.

In regard to insurance societies, these are regulated in the first instance by the Law of 29 April 1923 which set up a special legal system for safeguarding insured persons and all important interests relating to the operating of insurances and to the control and employment of the funds which accrue to insurance societies (1).

The provisions of this basic law, which has undergone amendment several time do not apply, *inter alia*, to agricultural mutual insurance associations constituted in accordance with the Law of 7 July 1907 and the Decree Law of 2 September 1919. This subject will be dealt with at a later point (2).

The Decree of 1923 of which the more important provisions will be here examined, taking count of subsequent amendments, is divided into 8 headings: preliminary provisions, life insurances, insurances against damage, balance sheets of private undertakings, government supervision over private undertakings, liquidation and failure of private undertakings, general and penal provisions, temporary and definitive provisions.

In accordance with the provisions of this law there are excluded from operating insurance: joint stock companies, companies in which the shareholders have no liability beyond their investment therein and limited liability companies; also companies the object of which is to operate insurance exclusively abroad. The national undertakings desiring to operate insurance and reinsurance against damage or loss, as well as foreign undertakings the object of which is to operate in Italy insurance against damage or loss and those which, in order to operate reinsurance in these branches, desire to establish representatives in Italy, must obtain in advance an authorisation from the Ministry of Corporations by means of the submission of an application, and the further submission, in the case of national undertakings, of the proof of their legal constitution and, if foreign undertakings, of the proof that they have legally instituted in Italy a representation in the terms of article 230 of the Commercial Code. The presentation of this proof is also necessary if the foreign companies desire to establish representation in Italy in order to operate re-insurance. Authorisation is not granted to any foreign company the country of origin of which does not allow Italian undertakings to operate on a footing of equality with its own national undertakings. The Ministry of Corporations fixes, as occasion arises, the special conditions of admission of foreign undertakings and of the prosecution of their operations as rendered necessary by the application of the above principle of parity of treatment.

(1) Gli Istituti e le Imprese di Assicurazione in Italia, already quoted. 1934, p. 71.

(2) Decree-Law of 29 April 1923, converted into law on 17 April 1925, amended by the Decree-Laws of 24 September 1923, 5 April 1925, 27 October 1927, 17 July 1931, 26 October 1933 and 12 July 1934. The last-mentioned decrec-law was converted into law, with certain amendments, on 12 February 1935.

The national and foreign undertakings which, when the Decree Law of 12 July 1934 came into force, were not yet empowered to operate in Italy, must have a share capital or a guarantee fund, in the case of mutual insurance societies of not less than 5,000,000 liras, one half at least being paid up, for the operation of hail insurance as well as accident insurance, insurance against civil liability and other branches. If the business includes life insurance, and payment of lump sums, the share capital or guarantee fund must amount to 20,000,000 liras; and to 10,000,000, of which one half should be paid up, if the business includes insurance against fire and transport risks. In the case of undertakings operating in a single branch of insurance, provided that the risks specifically named above are not included, it may be prescribed by Decree of the Ministry of Corporations, that the capital or guarantee fund be limited to 2,500,000 liras.

With regard to undertakings for insurance and payment of lump or capital sums which were already operating at 30 June 1934, the law prescribed that they should show that the paid up capital, in the case of share companies or co-operative societies, or the guarantee fund, in the case of mutual insurance societies, is not less than two fifths of the sums shown above.

The provisions in question do not apply to life insurance and transport insurance societies in certain conditions, nor to societies for insurance against damage operating, within the limits of a province in which they have headquarters, in a single branch not specifically indicated above (hail insurance has been specifically named) provided that the total of annual premiums does not exceed for each commune the limit indicated by article 33 of the Decree-Law of 29 October 1927 (that is, 60,000 liras for each branch and 200,000 liras for all branches taken together)

Apart from the provisions relating to capital, there are others relating to guarantees or securities. National or foreign undertakings, including those of mutual or co-operative form, must, in order to operate insurances other than those on the duration of human life, constitute and immobilise, in favour of the mass of insured persons, for the contracts coming under the Italian schedule, a guarantee which should amount at the end of each financial year to 35 per cent. of gross premiums of the past financial year relating to insurances taken out, in the course of the year itself and previously to it, on risks included in the Italian schedule. In the event of reduction of the guarantee so immobilised, the Minister of the Corporations may arrange that the surplus shall be set aside for the compensation of damages not liquidated or not yet paid. This proportion is reduced to 15 per cent. for short period risks, in accordance with the rules and the distinctions established by the Regulations, except for hail and live stock risks.

The guarantees just referred to cannot in any case be less than the sum of 200,000 liras for national undertakings, which according to the terms of their constitution, may operate a single branch of insurance, as well for the foreign undertakings which have been empowered to operate in Italy a single branch of insurance; these guarantees cannot be less than 500,000 liras for the national and foreign undertakings which in accordance with their rules may operate or have been empowered to operate several branches of insurance.

Mutual insurance associations and co-operative societies which in virtue of the provisions of their constitution or even simply as a matter of fact operate in a single commune, are not subjected to the obligation of establishing a guarantee, provided that the premiums or annual contributions do not exceed 30,000 liras for each branch and as total for all branches operated, 100,000 liras.

The minima guarantees are reduced to one fourth if the premiums or contributions are higher than 30,000 liras, but less than 60,000 liras for each branch, and than 200,000 in all for all branches operated.

For the balance sheets of insurance societies it has been established that the period of three months beginning from the close of the financial year, allowed for the approval of the balance sheet, as stated in Art. 154 of the Commercial Code, is extended to six months; for undertakings operating reinsurance exclusively, this period may be extended to eight months by the Minister of the Corporations on the request of the undertakings themselves.

The balance sheet, established in conformity with the model approved by Royal Decree in execution of Art. 177 of the Commercial Code and the other documents enumerated in Art. 180 of the same Code, must be presented to the Ministry of the Corporations within a month from the date of the approval of the balance sheet. Foreign undertakings are empowered to establish their balance sheet in the manner prescribed by the law of their own country; but in addition they have each year to draw up a special report for the operations realised in Italy in accordance with the model prescribed.

Apart from the books prescribed by the Commercial Code, insurance societies have to keep subsidiary books and registers as prescribed by the regulations for the control of the balance sheet.

A very important provision of the law in question is also the one which obliges the societies to constitute a premium reserve for risks other than life risks, consisting of such premiums as are in course at the end of the financial year. This is done by entering on the balance sheet the amount of such fractions of premiums as relate to subsequent financial years as well as the amount of the instalments of premiums paid in advance. Opportunity is given for calculating the carry-forward of the premiums when it is not fixed by each insurance contract, in accordance with the respective dates of expiry, in such a way that normally it is not to be less than 35 per cent. of the premiums referring to the risks incurred during the financial year. As regards short period risks to be determined on the bases fixed by regulation the reserve is not to be lower than 15 per cent. of the premiums.

The government supervision over private insurance undertakings, as regards the application of the provisions of the law under consideration here, is exercised by the Ministry of the Corporations. This body has power to organise inspections held at the headquarters, or at the general office representative of the undertakings, as well as at the establishments dependent thereon, agencies, bureaux, premises which in any way whatever carry out insurance or reinsurance or which act as intermediaries. These inspections are made for the purpose of controlling the accomplishment and the due observation of the provisions inserted in the legislative measures and in the decrees of authorisation.

The Ministry of the Corporations is empowered to note any infringements of rules and does so by means of a process of checking effected by its own officers. The undertakings and their administrators, representatives, directors, agents, have to place at the disposal of the officers delegated for the inspections all books, registers and documents; they are expected to supply any explanations and information that may be required of them.

In the event of failure to observe the provisions mentioned and in the case of irregularity of working, this Ministry may prohibit the societies in question from effecting fresh business so long as they have not re-established the legal position. In the event of continued infringements of the provisions, the Ministry has power to place the contravening undertakings in liquidation.

The local agricultural mutual insurance associations are regulated by Decree of 2 September 1919 (1) and by the decree of execution of 20 February 1920, as well as by the subsequent legislative provisions contained in the amendments and additions to this law.

These societies, which, in order to come under the legislative provisions just described, must operate in a strictly local area, must not aim at profit-making, and of which the office-bearers must be unpaid (except the secretary and treasurer, by their own consent), were able up to the law of 1934, to secure corporate standing by means of a decree of the prefect. This law introduced, *inter alia*, very important amendments not merely into this question but into that of guarantee funds which the societies must hold in order to be able to practise insurance in certain branches.

The provisions relating to the guarantee funds have already been indicated when we dealt with the law of 1923 and the subsequent laws. We also refer the reader to what has been said above on the provisions relating to guarantees contained in the Decree-Law of 27 October 1927.

Assignment of corporate existence by means of decree of the prefect cannot in future be pronounced for societies engaged in branches of insurance specifically named in art. 1 of the Decree of 1934 already quoted, and among these branches is that of hail insurance. During the period up to 31 December 1935 the societies already recognised on the coming into force of the Decree of 1934, and the insurance societies operating in a single commune and with annual contributions not exceeding the limit indicated in article 33 of the Decree-Law of 29 April 1923, were obliged to take the necessary measures for limiting the purpose of their association. The provisions of the law of 13 July 1933 relating to the amalgamation and liquidation of insurance societies are applicable to these.

By the regulations of 1920 it was established that the insurance societies here in question must conduct each branch of insurance separately and that the rules of the societies, in addition to a general registration entrance fee, must prescribe a special entrance fee for each branch in which any member may desire to participate. Societies are moreover permitted to combine in a single working

(1) Decree of 2 September 1919 converted into law on 17 April 1925 amended by the Decrees of 21 October 1923, 27 October 1927 and 12 July 1934.

the different branches of insurance, when in consequence of the special uniformity of the agricultural industry or of the special organisation of the farms relating thereto, it is possible to group the various risks covered by the societies, and when the rules oblige the members to insure all the risks so grouped.

The terms of constitution of these mutual insurance societies must establish not only the total of the entrance fees mentioned, but also the rules to be followed for the constitution of the reserve funds of each branch of insurance, and the precise methods of levying first charges on these funds in case of deficit. The distribution of deficits on the working as well as the assignment and distribution of remainders must be effected separately for each branch of insurance.

The general reserve fund is intended to meet any depreciations and losses in the assets and to realise the other purposes contemplated in the terms of constitution. This general reserve fund is constituted by means of the general entrance fees and by means of a first charge of 10 per cent. on the special reserve funds about to be described, joined to the interest on the general reserve fund.

The special reserve funds for each branch of insurance are constituted by means of special entrance fees for the branches mentioned and by a first charge on the profits realised. This charge in the case of hail insurance will be 50 per cent. together with the interest charges on these special reserve funds. These reserves must be effected so long as their total amount has not reached three times the amount of the contributions of the last financial year. In the event of the reserve funds falling below that limit the society is expected to build up the reserves again.

Members admitted to the mutual insurance society are expected to pay the general entrance fee and the special entrance fees; the annual premiums in advance in proportion to the value insured, and any additional payments prescribed by the rules of the society; in addition it is understood that they insure with the society, without any limitation, all the property in their possession, exposed to one and the same risk, except in certain cases. Whenever on the occurrence of hail, members see their insured products damaged they should immediately give notice of the loss to the insurance society at the same time indicating the right measures to be taken to prevent any increase of the damage done. The damaged products must be left untouched until the society has proceeded to the survey and in any case until the third day after the damage incurred.

The maximum of the compensation payments which, having regard to the total of the damage incurred, may be granted by the mutual insurance societies, must be fixed by the rules of the societies. In any case however this maximum cannot exceed 90 per cent. in the case, *inter alia*, of hail insurance. Members of the mutual insurance society cannot in any case insure that part of the risk which is not covered by the society.

In accordance with the law of 1919, the societies in question may take out reinsurance and provide for the safeguarding of their interests by combining into federations of mutual insurance societies or reinsurance associations obtaining corporate status from the Ministry of the Corporations. This body by the same decree approves the terms of constitution of such federations which must

be resolved upon by the general meeting of the representatives of the mutual insurance societies thus combining. For the constitution of these organisations the initial adhesion of at least ten mutual insurance societies is required. If later the number becomes smaller, the organisations may none the less continue to function by decree of the Minister of Corporations.

It is the business of these organisations for reinsurance to see that the rules governing the mutual insurance societies so federated are observed and their internal character preserved; they should also institute a check on the regular keeping of accounts and on the administration in general, and should exercise all functions of a similar kind.

For the purposes of reinsurance, the proportion of the annual contributions made by each mutual insurance society must be approved by the reinsurance organisations, which should also determine the maximum and minimum limit of the share of the risk which should remain at the charge of the society.

These organisations are under the supervision of the Ministry of Corporations. In the event in which these organisations do not conform to the legislative rules and in the event of their being unable any longer to fulfil their functions, the Ministry of Corporations may take steps in view of the liquidation of these organisations.

Mutual insurance societies which are not formed into federations do not enjoy the fiscal and financial advantages established by the legislative measures about to be examined.

The federations of mutual insurance societies or reinsurance associations which conform to the legislative rules in question enjoy the advantages granted to these agricultural mutual insurance societies. These advantages consist either in the action of the Ministry, or in the subsidies under the regulation of 1920, or in a number of fiscal privileges.

By the Decree-Law of 27 October 1927 and in that of 12 July 1934 the Government was authorised to co-ordinate and to consolidate in a single law the various provisions contained in the Decree-Laws of 2 September 1919 and of 29 April 1923 and in the subsequent Decrees by which they were completed or amended.

We now turn to a government measure of great importance for hail insurance, relating to the general obligatory conditions of the policy for hail insurance. A Ministerial Decree of 29 February 1936 replaces the conditions established by decrees which were promulgated on 20 April 1928, 28 February 1930 and 28 February 1931.

Whereas the Decree of 1928 had, *inter alia*, introduced into all new contracts the clause for non-compensation of losses below a certain limit, the application of which was suspended in 1929, the Decree of 1930 re-established the optional nature of this clause by means of a payment of a supplementary premium; in 1931 however the obligatory nature was restored and finally revoked by the last measure which now comes under review here.

In the first place there are certain provisions relating to the duration of the insurance contract. If this is stipulated for a number of years, its duration must become the subject of a separate declaration inserted in the policy and signed by the insured person who shall indicate the number of years for which it is

made, signing with his own hand. When the contract has expired, it is not renewable except on the express desire of the two parties. No conditions may be introduced on the policy, and any engagement taken with the object of tacitly prolonging the duration of the contract, or of making it conditional on losses or on other circumstances, is prohibited.

The policy is agreed under the limiting clause referred to as follows: (a) an 8 per cent. limit for non-compensation for tobacco, gourds and fruits; (b) 6 per cent. for hemp, maize, tomatoes, beet seed, castor oil plant and grapes; (c) 4 per cent. for all other products. For losses in excess of these limits, only the excess is compensated.

This limit may be set aside by agreement by means of the application of a super-premium at the maximum rate of 20 per cent. of the premium.

The possibility of doubling the limit fixed is provided for by means of a reduction in the premium at the minimum rate of 30 per cent.

The decree establishes that the payment of the loss must be made on the basis of the prices fixed in the policy for each product, but that none the less it may be agreed that in the case of very severe damage or complete loss of the products, the saving realised on the costs of harvesting may be deducted from the compensation payment.

As regards the form of the policy, it has been established that there should therein appear only the premium, the super-premiums either in respect of the clause limiting compensation or of the survey expenses, the reductions of the premium either as against the doubling of the limit of non-compensation or against the deduction of the savings realised on the costs of harvesting, or, for contracts for more than one year, also the supplement for management not above 10 per cent. of the premium, the governmental tax and the interest charge on the bank draft issued for the payment of the premium.

In regard to the normal expiry of risks, this occurs when the product has arrived at maturity and not later than 10 June for turnips; 20 June for mulberry leaves and not beyond the end of the silkworm season; 15 July for fenu-greek, flax and lupin, and flax-seed; 31 July for oats, beans, wheat, barley, rye, spelt and vetch; 31 August for hemp; 15 September for lucerne seeds, clover and "sulla;" for all other products, 31 October. The period of the risk may be prolonged, without super-premium, beyond that of the dates indicated on the request of the insured person, at the moment of making the contract, for zones where the vegetative cycle would finish normally later than these dates, and with super-premium, when the prolongation is requested in the course of insurance in consequence of facts of an exceptional kind and impossible to foresee. In all cases, it is understood that the risk terminates five days after the plant cultivated and insured has been cut and that it never goes beyond the dates here given.

If on a single insured plot or on several such, there has been total destruction or at least destruction of one third of the products in consequence of various hail losses, the insured person has a claim to have these lots removed altogether from the contract, and to have the premium reimbursed to him, if he makes the request before fifteen days before the time of the harvest.

A proportional account then is made from the day of the written request up to the date presumed for the expiry of that the risk relative to the product for which this removal of lots has been requested.

The percentages of losses in the event of subsequent hail storms must always be referred to the total of the value originally insured.

For every notification of loss the insured person should make a deposit of one per thousand of the total insured for the products in respect of which damage is notified, with a minimum of 30 liras and a maximum of 100 liras for each notification.

The survey expenses are not to exceed 7 per cent. of the damage paid for and in any case they are not to exceed in all 100 liras nor to be less than 15 liras. If the damage turns out to be within the limit of non-compensation, the survey expenses are paid by the company which also has to make the deposit already mentioned. For each loss notified and not recognised by the survey, the insured person must pay the costs of the survey as met by the society for the part in excess of the deposit mentioned above. Exemption from costs of survey may be agreed upon by means of increase in the premium to the extent of 10 per cent.

The determination of the damage may be established by amicable arrangement among the parties concerned or by means of a survey carried out by one or several experts appointed by the company or society. These must be persons qualified in agricultural science, engineers, expert surveyors or agricultural experts legally authorised for the exercise of their profession. The party not accepting the survey may demand a further survey to be carried out by a board of experts, appointed one by the company, one by the insured person and the third by the two others from among persons registered in the category syndicates. In the event of the experts not being agreed on the choice of the third, this selection shall be made by the President of the Provincial Economy Council who is obliged to choose the third expert from among the persons registered in the category syndicate. This appeal survey cannot be impugned; it thus becomes effective and irrevocable. Whatever may be the result of the survey, each party shall pay the expert chosen by such party and half of the costs occasioned by the third expert.

In the case in which the harvest is close at hand, the report of the damage must be made within the five days beginning from the date of the declaration of the disaster.

The insured person must notify by means of a formal declaration the agency which issued the policy within three days from the time of the occurrence of the disaster.

In connection with this Ministerial Decree, the most important provisions of which have been set out here, mention should be made of the agreement reached in the course of the first months of 1930 between the Fascist Confederation of Farmers and the National Hail Syndicate of the National Fascist Federation of Insurance Companies, as the conclusion of a series of preliminary negotiations which took place between the categories concerned on the basis of the resolution of the Corporation of Credit and Insurance. This body in the

month of June 1935, on closing its discussions on the problem of the improvement of insurance against hail damage, had invited the associations concerned to come to a collective economic agreement for the regulation of certain conditions of the insurance contract.

It would seem of interest to set out here not only the provisions contained in the agreement referred to, but also the resolutions of the Corporation of Credit and Insurance, and the desiderata of the categories concerned which give expression to tendencies and objects in view.

The agreement established that: (a) the limits for non-compensation fixed by the legislative measures in force may be abolished in consideration of a super-premium not exceeding 20 per cent., or on the other hand may be doubled in consideration of a reduction of the premium not less than 30 per cent.; these provisions are equally applicable to contracts covering more than one year if in course; (b) the variable tariff may be granted on the request of the insured person (with power to extend the concession to the pluriannual contracts in course) for the vines, hemp, tobacco, tomatoes, fruits and gourds; (c) if the tariff fixed for the pluriannual contracts is higher than that adopted by the company or society in question year by year, it may be reduced to the extent of that, with deduction of the rebate applicable in view of a pluriannual contract; (d) the supplement for management must be 10 per cent.; (e) exemption from the survey costs is granted in consideration of a super-premium of 10 per cent.

The resolution of the Corporation of Credit and Insurance contains in the first place an invitation addressed to the syndical associations concerned to come to a collective economic agreement in which, after having recognised the optional character of insurance against hail, there shall be introduced the following conditions: (a) offer made to growers of varying types of policy (with or without limit of non-compensation) adapted to the varying requirements of the farms; (b) opportunity given to growers to allow the deduction of costs of harvesting saved in the case of very serious or total damage in consideration of a fair reduction of the tariff; (c) power given to growers to apply for exemption from survey expenses in consideration of a 10 per cent. increase of the tariff; (d) modification of the existing rules as regards the deduction of harvesting costs saved; (e) institution of an office responsible for the collection of the statistics, a task otherwise entrusted to the Corporation; (f) the necessity of a wide policy of propaganda for the purpose of securing not merely a knowledge of the extent and the spread of hail insurance among the agricultural classes, but also of encouraging the improvement of production in view of obtaining a more effective resistance against hail, and a more scientific distribution of crops from this point of view.

This resolution represents the conclusion of the proposals submitted and of the discussions carried on at the time of the session of June 1935 of the Corporation.

The parties concerned in this important question had submitted proposals and arguments which constituted a concrete manifestation of their respective points of view of great interest.

The following are the points which have been submitted to the examination of the Corporation.

On the side of the Fascist Confederation of Farmers:

(a) the excessive number of the hail insurance companies and the consequent increase in general expenses, costs of survey, and commissions—all of which bring about an increase in tariffs; (b) the necessity for reducing the cost of the service in view of getting rid of the vicious circle between extension of tariffs and extension of the covering of risks.

On the side of the Fascist Confederation of Farm Workers:

(a) optional introduction of a limit of non-compensation; (b) abolition of the concordat for the application of tariffs; (c) power granted to the farmer not to reckon in the liquidation the harvesting costs in the case of total loss; (d) advisability of organising enquiries for the formation of a national mutual hail and fire insurance association in recognition of the fact that hail constitutes a national calamity and that in consequence the State ought to participate in the payment of compensation; (e) inadvisability of granting legal privilege to bills of exchange issued for the payment of the premium in accordance with a request made by the Company in this sense; (f) advisability of examining the problem of hail insurance by the Corporations in general meeting and from the standpoint of the breaking up of the insurance industry which should be replaced by a new organisation under a mutual form remaining in the hands of the agricultural producers.

On the side of the Fascist Federation of Insurance Undertakings: (a) the low range of premium rates practised by Italian insuring institutions which finds confirmation in the fact that the companies frequently show a loss on the year's working and that in the course of the last five years the losses paid have exceeded the premiums accepted, without taking into account costs of working; (b) the slowness with which the idea of insurance penetrates among the agricultural population; (c) technical difficulties and drawbacks of compulsory insurance (this has been proved by the failure of experiments in other countries); (d) the impossibility of reducing beyond certain limits the working expenses of the companies, in spite of all measures taken with this object; (e) the impossibility of adapting the cost of the insurance to the paying power of the insured persons, and the necessity of adapting the premium to the risk if the companies are to avoid difficulties in effecting reinsurance; (f) the necessity for fixing premium rates by taking into account statistics collected in the course of many years' experience; (g) the need for revision of the principles at present ruling hail insurance, *viz.*, modification of the system of the application of the limit for non-compensation and its extent; introduction of the condition by which, in the case of total loss, the harvesting costs saved are deducted from the compensation payment; concession of legal privilege to bills of exchange issued in payment of premiums; increase of the contribution of insured persons to the costs of assessment of losses.

On the side of the Fascist Confederation of Workers in Credit and Insurance Undertakings: (a) abolition of the hail concordat; (b) thorough examination of the problem of the number of companies; (c) necessity for obtaining at all costs

the reduction of costs of the assessment of losses (*rilevazione*); (d) advisability of granting legal privilege to bills of exchange issued for payment of premiums (1).

Before concluding this article, some mention may usefully be made of an important study made by Father Bernard M. Paoloni, O. S. B., on the distribution of hail storms and the damage caused by hail in Italy.

This article which will appear in the course of the next few months is based on statistics collected in 4000 communes by the Fascist Confederation of Farmers which placed at the disposal of the writer the agricultural trustees (*fiduciari agrari*) of all the communes, and also circulated questionnaires on the subject.

The questions included chiefly refer to the average of the hail storms, to the "frazioni" of the communes most frequently affected by hail, to the extent of land affected, to the period of the year in which hail storms are most frequently reported, to the phenomena usually accompanying hail storms, the crops most frequently damaged; in addition the percentage of insured persons and the premiums charged by the insurance societies or companies.

Although this study (2) will be complete as regards the distribution of hail in time and in space, and as regards the losses caused by hail in Italy, it does not profess to go deeply into the scientific and technical aspect of the problems of the distribution of hail in relation to the physical geography of Italy, the losses caused to different crops, and hail insurance in relation to the different crops. These problems are in course of being studied respectively by Profs. Azzi, Briccoli and Rocchi of the Ecological Laboratory of the Agricultural Institute of Perugia.

The following are some official statistics relating to the activities of insurance societies operating this branch in Italy.

Premiums accepted in the course of 1933, including premiums passed on to the "Unione Italiana di Riassicurazione," were as follows:

Received by national insurance undertakings, 71,119,000 liras; by foreign undertakings, 3,624,000 liras. A total of 3,678,000 liras has been passed to the "Unione Nazionale di Riassicurazione" by the national insurance undertakings.

During the years 1930-32, a total of 124,451,000 liras in premiums was registered for 1930, of 84,012,000 liras for 1931 and 80,938,000 liras for 1932.

The statement given below shows the premiums chargeable to the different financial years for the period 1930-33, in other words the figures as determined by taking in account both the portions of premiums coming from the previous financial year and those relating to the succeeding year. The premiums are compared with the losses. The resulting ratio is of purely technical character

(1) *Assicurazioni*. Rivista di diritto, economia e finanza delle assicurazioni private. Rome, Nov-Dec. 1935.

(2) P. BERNARD M. PAOLONI, circa una prossima pubblicazione sulla distribuzione e sui danni della grandine in Italia. *La Meteorologia Pratica*. Rivista di meteorologia e scienze affini. Perugia, September-December 1935, p. 244.

and in reference to this, it should be noted that the figures shown do not include management costs and that the total premiums include purchase commissions as well arrears of premiums whether capable of collection or not.

	1930 Liras	1931 Liras	1932 Liras	1933 Liras
Premiums relating to the financial year .	108,312,937	74,625,891	75,081,034	66,684,285
Losses.	119,552,220	42,047,570	80,079,745	86,384,237
Percentages	110.32 %	56.34 %	106.65 %	(1) 129.46 %

F. ARCOLEO.

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RIEUL PAISANT Marcel. *La Commission Internationale d'Agriculture. Son rôle dans l'Economie Européenne.* The C. I. A. Ed. Paris, 1936.

[M. le Marquis de Vogüé, who for the last 12 years has been and still is the President of the Commission Internationale d'Agriculture, in his foreword to the volume by Dr. Marcel Rieul Paisant on the origin and development of that institution, points to the steadily increasing importance of the role played by it in the field of the international organisation of agricultural interests.

The Marquis de Vogüé has been largely responsible for the success of a movement which started in 1889 and which in the course of its development has brought together to work for a common purpose the members of one of the most individualistic branches of human activity.

Dr. Paisant's pages are the demonstration of the wisdom of the policy of the Commission during nearly half a century of its existence. The writer was particularly well qualified to deal with this subject, as his association with the C. I. A. has been as long as it has been useful. In the 128 pages of his book Dr. Paisant summarises the contents of many a volume dealing with the part played by the international agricultural interests in the midst of the great agricultural crises of the last 50 years, such as the crisis brought about by the competition of new countries (1879-1896), the crisis of the reorganisation of the sales of agricultural products (1896-1914), the war crisis and the economic reconstruction that followed it (1914-1926) and lastly the crisis of overproduction since 1927. Several pages are dedicated to the international agricultural policy at the beginning of the year 1936, which, in the author's opinion, can be characterised as follows: "No autarchy, but rationalisation of production by the agriculturists themselves under the control of the State; international exchanges regulated through plurilateral conventions and direct bilateral agreements facilitated by a steadying of the value of money; lastly, a policy of absolute respect for the great moral principles which constitute the

(1) Gli Istituti e le Imprese di assicurazioni in Italia, already quoted. Year 1934 and preceding years.

basis of civilisation itself." The regime of property and agricultural labour, agricultural production and sales, vocational organisation and co-operation of agriculturists, the teaching of agricultural science, agricultural statistics are the subjects treated with the greatest care and competency by Dr. Paisant. The last part of the book deals with the present organisation of the C. I. A. and its two special commissions: the Commission of Agricultural Co-operation and the Commission of Agricultural Labour. A brief account of the relations existing between the C. I. A. and the other great international bodies—the International Institute of Agriculture, the League of Nations and the International Labour Bureau—and a bibliography conclude Dr. Plaisant's history of the C. I. A.

V. F.

UCKER Paul: Die italienische Agrarpolitik seit 1925, unter besonderer Berücksichtigung des Kampfes um das Getreide. Schweizerische Beiträge zur Wirtschafts- und Sozialwissenschaft, II. Aarau, H. R. Sauerländer & Co., 1935, pp. XX + 182.

This publication deals with the agricultural policy of the Italian Government since 1925 and the principles which have inspired it. The author emphasizes the character of this policy by properly placing it in the general plan of the character and tendencies of the economic and social situation in Italy. In order to become fully acquainted with the actual status of the new organisation of Italian agriculture and get first hand information, the author visited Italy and put himself in touch with the most representative and best informed men in the field of his investigations. The main part of the work is dedicated to the integral land reclamation scheme and to the wheat policy of the Italian Government. As regards the latter the author mentions the economic and political circumstances which compelled the Italian Government to adopt a definite policy in order to insure the independence of the country in the provisioning of wheat. The means and method adopted for the attainment of this end and the results obtained are clearly and correctly stated.

G. C.

GUTIERREZ VALLADON V. El Problema Mundial del Azúcar. Editorial Castro Madrid 1936. I Vol. pp. 230.

The author, the President of the Cuban Institute of Sugar Refineries, and chairman of various international delegations and conferences on sugar questions is well equipped to deal with this product of prime necessity, which has been severely affected by the upheavals of the great war and the following periods. All the economic measures which have been put forward to remedy the sugar crisis are here set out with the utmost clearness. The ten years of experiments and discussions which served to form this great volume of experience begin, in the work under review, in 1926 and conclude in 1935.

The writer simply claims to set out the facts in order that students may, in the light of experience, examine them, select from them and utilise them.

E. M. d. B.

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No. 9

PRODUCTION AND CONSUMPTION OF AND EXTERNAL TRADE IN MEAT IN FRANCE (*Concluded*)

III. — Course of Foreign Trade, Exports and Imports.

Before the war, France had a somewhat active live stock and meat export trade, relating mainly to selected breeding animals, bullocks, calves and beef and veal sent to Switzerland and Italy; from that time a tendency began to be observed towards reduction of live animals in favour of an increase of slaughtering products. France imported small quantities of beef and veal (mainly in the form of tinned meats and live animals from Algeria), some pigmeat (hams, bacon, sausages from the United States, England and Germany, as well as a certain quantity of live pigs from the Netherlands), the volume decreasing with the development of the national live stock; finally a large and increasing quantity of live sheep coming almost exclusively from Algeria.

In all the value of the meat imports in 1913, reckoning the animal fats, amounted to 107,000,000 gold francs, more than 40,000,000 of which were paid to Algeria; exports represented a value of 95,000,000 and the trade was balanced by a small deficit of 12,000,000 gold francs.

As appears from Table VI in the post-war years there was some reduction of exports in consequence of the condition of the live stock which was in course of reconstitution; the exports were mainly beef and veal, fresh or preserved and salted pigmeat for the Saar, Germany, Belgium; they were later reduced from 1924 to 1927 to a very small volume, affected by the rise in cost price of the production of French live stock.

So as to ensure, in view of the position of national production, the home consumption, a fairly high rate of importation was maintained, equal to and even greater than that of 1911-1913; importation was moreover stimulated by a very marked rise of prices of meat on the home market, which brought about a still greater rise of imported meat prices. In 1926 and 1927 importation was at its highest, while exports fell to their lowest level; the deficit of the trade balance, calculated as above, was nearly 800,000,000 paper francs in 1925 and 1926 (765,000,000 and 784,000,000 respectively), in 1927 it was nearly 1,100,000,000 equivalent to 200,000,000 gold francs, seventeen times as large as the pre-war figure.

In 1928 and 1929, trade movements underwent a radical change the cause of which may be found, at least in part, in the fall of beef and veal prices on

TABLE VI. — Exports of

live animals and meat.

	1935	1934	1933	1932	1931	1930	1929
LIVE ANIMALS (thousands of head)							
<i>Cattle:</i>							
Bullocks	0.6	0.7	0.1	0.2	2.3	7.7	32.2
Cows	7.9	7.1	2.5	1.7	2.7	9.3	30.7
Bulls	0.2	0.1	0.1	(1) —	(1) —	1.4	7.8
Young bullocks and young bulls . .	0.2	0.4	0.1	0.2	0.1	8.2	41.0
Heifers	0.2	0.4	0.1	0.1	0.3	5.4	28.6
Calves	1.9	0.7	0.1	0.1	0.1	11.0	21.5
<i>Sheep:</i>							
Ewes and wethers	0.8	0.7	0.5	0.7	0.8	1.1	1.4
Lambs	0.2	1.1	0.4	0.6	1.6	7.5	0.4
<i>Pigs:</i>							
Pigs	4.6	3.4	(1) —	0.1	0.4	0.4	1.0
Sucking pigs	0.3	1.8	0.1	(1) —	0.2	0.2	1.1
MEAT (thousands of quintals)							
<i>Beef (1):</i>							
Fresh or chilled meat	16.9	12.5	11.5	4.9	12.6	27.9	42.2
Salt meat or raw meat in brine or unprepared meat	0.2	0.3	0.1	0.3	0.5	1.1	1.0
Tinned meat	19.0	20.2	19.0	19.0	20.4	21.7	23.8
Total	36.1	32.7	30.6	30.2	33.5	50.7	67.0
<i>Mutton:</i>							
Fresh or chilled meat	0.5	0.1	0.9	1.7	2.0	0.6	0.6
<i>Pork:</i>							
Fresh or chilled	4.3	0.4	0.1	0.2	0.4	0.3	0.3
Salted meat (hams, etc.)	8.1	4.2	2.8	2.7	3.2	4.7	5.4
Sausages, etc.	22.7	20.0	12.2	19.2	9.8	11.4	9.2
Total	35.1	24.5	15.1	22.1	13.4	16.4	14.9
General total	71.3	57.4	46.6	54.4	39	68	82

(1) Including "other" meats.

1928	1927	1926	1925	1924	1923	1920	Average			Pre-war period	
							1929-1933	1924-1928	1920-1923	1913	1911
LIVE ANIMALS (thousands of head)											
29.8	8.9	1.9	0.5	4.9	22.4	3.6	8.5	9.2	9.4	40.2	47.7
21.2	7.6	2.8	1.8	12.2	35.2	4.9	3.4	9.1	15.1	13.7	28.1
9.6	0.5	0.1	0.2	1.3	3.9	0.2	1.9	2.1	9.4	3.1	6.7
44.2	20.5	1.2	(1) —	0.1	4.5	(1) —	1.9	1.3	1.3	0.2	0.5
21.0	5.5	0.3	0.1	0.7	5.0	0.4	6.9	9.5	29.6	0.6	1.7
30.8	12.6	0.1	0.1	3.9	12.7	2.1	6.6	9.5	7.6	16.9	85.5
6.1	7.4	0.8	0.4	1.5	9.0	5.6	0.7	3.2	6.4	23.6	11.1
2.0	2.1	(1) —	0.2	(1) —	0.7	0.1	2.1	0.9	0.7	32.9	34.3
3.8	0.1	6.2	15.4	7.9	37.2	31.1	0.4	0.7	34.0	47.2	29.8
0.5	0.5	32.4	108.2	4.8	15.4	1.4	0.3	29.3	—	3.3	3.5
MEAT (thousands of quintals)											
53.9	52.2	15.9	46.4	2.7	116.0	34.5	19.8	34.2	57.4	55.4	30.8
1.4	0.8	1.1	1.1	2.7	2.3	8.2	0.6	1.4	6.7	1.6	1.4
17.2	10.7	10.3	11.8	20.7	77.7	116.7	20.8	14.1	102.6	25.0	17.4
72.5	63.7	26.3	59.3	26.1	196.0	159.4	41.2	49.7	166.7	82.0	40.6
1.4	1.2	0.7	0.9	1.1	3.7	4.5	1.2	1.1	2.6	1.8	1.3
0.5	0.3	0.2	0.2	2.3	1.5	1.8	0.3	0.7	2.3	0.7	0.7
12.5	14.9	14.1	11.3	11.8	10.7	95.8	3.6	12.9	31.8	9.8	8.8
22.2	18.3	15.1	15.2	22.6	18.2	8.2	14.4	18.7	13.3	6.1	4.7
35.2	43.5	29.4	26.7	36.7	30.4	105.8	18.3	32.3	47.4	16.6	14.2
109	108	56	87	74	230	270	61	83	217	100	65.9

TABLE VII. — Imports of

	1935	1934	1933	1932	1931	1930	1929
LIVE ANIMALS: (thousands of head)							
<i>Cattle:</i>							
Bullocks	0.7	3.0	7.9	11.9	71.7	24.8	0.1
Cows	2.1	3.2	9.2	13.1	28.4	18.8	0.5
Bulls	0.5	0.7	2.7	7.8	9.7	5.6	0.2
Young bullocks and young bulls	(1) —	(1) —	0.3	0.4	1.9	0.6	0.5
Heifers	0.1	0.3	1.8	7.5	40.1	7.8	1.0
Calves	1.4	0.9	4.8	6.6	24.8	7.3	0.4
<i>Sheep:</i>							
Ewes, rams and wethers	869	786	791	763	914	1,218	646
Lambs of 10 kg. and under	0.5	2.5	0.7	5.9	1.0	0.5	0.1
<i>Pigs:</i>							
Pigs	31.6	81.2	161.1	187.1	498.5	297.8	37.1
Sucking pigs	(1) —	0.5	14.7	10.6	19.2	36.6	0.7
MEAT: (thousands of quintals)							
<i>Beef and veal (2):</i>							
Fresh or chilled	1.4	3.1	6.9	17.0	90.9	17.2	7.4
Frozen	114.3	149.5	207.8	272.1	522.4	364.0	122.5
Prepared (salted, prepared or preserved in tins)	51.0	56.3	50.1	52.8	74.3	53.8	44.6
Total	166.7	208.9	264.8	341.9	687.6	435.0	174.5
<i>Mutton and lamb:</i>							
Fresh or chilled	38.4	29.6	28.1	33.8	78.5	57.8	37.3
Frozen	41.2	66.1	62.1	61.0	111.1	79.7	59.2
Total	79.6	85.7	90.2	94.8	189.6	135.5	96.5
<i>Pigmeat:</i>							
Fresh or chilled	5.3	15.3	52.6	68.4	213.1	197.5	36.8
Frozen	7.7	11.0	28.0	18.2	81.1	34.9	67.9
Salted (hams, salted fat pork, etc.)	8.6	12.5	24.6	26.6	43.4	42.4	30.1
Other types of pigmeat	7.8	9.3	15.6	24.0	28.8	17.8	10.5
Preserved in tins	3.2	3.3	9.7	13.9	28.0	17.5	5.7
Total	32.6	58.4	130.5	151.1	394.4	310.1	151.0
General total	279	346	485	588	1,270	872	422

(1) Under 50 quintals. — (2) Includes "other" meat. — (3) Including preserved pigmeat. — (4) The

live and slaughtered animals.

1928	1927	1926	1925	1924	1922	1920	Averages			Pre-war	
							1929-1933	1920-1923	1924-1928	1913	1911
LIVE ANIMALS: (thousands of head)											
0.1	0.3	2.9	10.1	10.7	46.5	9.4	21.3	4.8	22.2	5.0	19.2
0.4	1.7	4.1	4.3	0.7	25.2	7.6	14.0	2.2	11.1	3.2	2.8
0.2	0.3	0.3	0.9	0.3	6.0	0.6	5.2	0.4	2.1	0.5	0.3
0.2	0.6	0.2	0.3	0.1	0.8	0.3	0.7	0.3	0.7	0.5	0.1
0.6	5.0	14.1	3.2	0.1	15.9	6.6	11.6	4.6	7.6	1.8	0.5
0.2	2.7	1.5	3.0	0.3	63.3	11.8	8.8	1.5	19.8	6.7	1.9
633	702	1,245	1,191	1,038	1,106.8	878.7	866.4	761.8	483.3	1,289.3	969.8
0.2	1.2	1.1	1.1	0.6	2.1	3.2	2.8	0.8	1.4	1.6	0.8
100.0	102.5	51.3	24.8	30.0	206.9	93.7	236.3	51.7	96.8	2.3	1.0
40.2	65.3	2.9	0.3	(1) —	0.2	0.8	16.4	21.7	0.7	—	—
MEAT: (thousands of quintals)											
12.9	544.4	646.6	960.1	905.6	355.4	1,331.8	27.9	633.9	556.6	23.1	25.0
99.7							297.7				
(3) 53.8	(3) 56.7	(3) 92.3	(3) 85.7	(3) 134.2	(3) 46.2	(3) 145.0	66.1	(3) 88.5	(3) 82.6	30.0	17.3
(3) 160.7	(3) 600.0	(3) 720.0	1,040.0	(2) 1,020.0	(3) 390.0	(2) 1,570.0	381.7	(3) 710.0	(3) 630.0	50.0	40.0
26.6	135.3	92.5	107.7	111.0	65.2	160.8	47.0	83.3	84.6	4.4	2.8
43.2							54.6				
69.8	135.3	92.5	107.7	111.0	65.2	160.8	101.6	83.3	84.6	4.4	2.8
274.5	454.6	89.5	74.0	350.1	120.1	30.9	113.7	243.1	77.1	4.3	61.0
45.6							46.0				
(1) 17.4	(4) 62.5	(4) 49.3	(4) 59.8	(4) 160.9	(4) 53.3	(4) 373.7	33.4	(4) 69.9	(4) 173.5	(4) 56.8	(4) 82.1
(1) 2.8	(4) 13.5	(4) 6.7	(4) 15.9	(4) 17.1	(4) 24.8	(4) 6.0	17.3	11.2	(4) 12.0	(4) 10.2	(4) 7.9
(4) —	(4) —	(4) —	(4) —	(4) —	(4) —	(4) —	15.0	(4) —	(4) —	(4) —	(4) —
330.0	(4) 540.0	(4) 150.0	(4) 160.0	(4) 550.0	(4) 200.0	(4) 420.0	225.4	350.0	(4) 270.0	(4) 80.0	(4) 160.0
560.0	1,280.0	960.0	1,310.0	1,660.0	640.0	2,070.0	709.0	1,140.0	980.0	130.0	200.0

customs nomenclature does not differentiate between preserved pigmeat and certain prepared meats.

TABLE VIII. — *Net Imports (+) or Net Exports (—)*

	1935	1934	1933	1931	1929	1928
1. LIVE ANIMALS (thousands of head)						
Full-grown cattle	— 5.8	— 1.5	+ 19.0	+ 146.1	— 138.0	— 124.3
Calves	— 0.5	+ 0.2	+ 4.7	+ 24.7	— 21.1	— 30.6
Sheep	+ 868	+ 780	+ 790	+ 766	+ 644	+ 625
Young pigs of 6 months and over . .	+ 27	+ 78	+ 161	+ 498	+ 36	+ 96
Sucking pigs	— 0.3	+ 6.7	+ 13.6	+ 19.0	— 0.4	+ 39.5
Horses for slaughter	—	—	+ 15.2	+ 55.3	+ 4.0	+ 3.1
LIVE WEIGHT (thousands of quintals)						
Full-grown cattle	— 23	— 15	+ 90	+ 699	+ 414	— 469
Calves	— 1	—	+ 3	+ 21	— 26	— 38
Sheep	+ 328	+ 298	+ 301	+ 353	+ 245	+ 238
Pigs	+ 25	+ 79	+ 142	+ 415	+ 32	+ 90
Horses for slaughter	+ 31	+ 37	+ 76	+ 277	+ 20	+ 15
Total . . .	+ 350	+ 420	+ 610	+ 1,760	— 150	— 160
2. MEAT (thousands of quintals)						
Beef and veal	+ 131	+ 176	+ 234	+ 654	+ 107	+ 88
Mutton and lamb	+ 80	+ 86	+ 90	+ 188	+ 96	+ 68
Pigmeat	—	+ 27	+ 115	+ 331	+ 136	+ 295
Total . . .	+ 211	+ 289	+ 439	+ 1,173	+ 339	+ 451

of live and slaughtered animals.

	1925	1924	1923	1922	1920	Averages			Pre-war	
						1929-1933	1924-1923	1920-1923	1913	1911
1. LIVE ANIMALS (thousands of head)										
+ 16.2	— 7.3	— 46.2	+ 64.3	+ 15.4	+ 29.4	— 19.9	+ 13.8	— 46.8	— 41.8	
+ 2.9	— 3.6	— 2.3	+ 59.4	+ 9.7	+ 2.2	— 8.0	+ 12.0	— 10.2	— 83.6	
+ 1,191	+ 1,035	+ 1,189	+ 1,102	+ 876	+ 864	+ 758	+ 1,049	+ 1,224	+ 925	
+ 9	+ 22	+ 39	+ 170	+ 62	+ 236	+ 45	+ 63	— 10	+ 188	
— 47.9	— 4.8	...	...	...	+ 16.1	— 7.6	...	— 1	— 2.5	
+ 8.0	—	+ 2.6	+ 2.1	+ 2.3	+ 24.9	—	+ 1.7	...	...
LIVE WEIGHT (thousands of quintals)										
+ 59	— 50	— 27	+ 352	+ 60	+ 16	+ 83	+ 129	— 235	— 81	
+ 2	— 4	— 7	+ 47	+ 12	— 1	+ 6	+ 15	— 6	— 61	
+ 455	+ 393	+ 445	+ 424	+ 351	+ 331	+ 366	+ 408	+ 471	+ 364	
+ 15	+ 18	+ 20	+ 150	+ 94	+ 200	+ 54	+ 73	+ 15	+ 195	
+ 40	+ 27	+ 13	+ 10	+ 11	+ 125	+ 19	+ 8	...	...
+ 580	+ 380	+ 440	+ 980	+ 530	+ 670	+ 528	+ 633	+ 245	+ 217	
2. MEAT (thousands of quintals)										
+ 980	+ 990	+ 440	+ 130	+ 1,360	+ 341	+ 660	+ 470	— 30	— 10	
+ 110	+ 109	+ 90	+ 60	+ 160	+ 100	+ 80	+ 80	+ 3	+ 1	
+ 130	+ 510	+ 370	+ 170	+ 310	+ 207	+ 230	+ 230	+ 60	+ 150	
+ 1,220	+ 1,610	+ 900	+ 360	+ 1,830	+ 648	+ 1,060	+ 780	+ 90	+ 160	

TABLE IX. — *Influence of Foreign Trade on National Meat Production.*

	1935	1933	1931	1929	Average 1929-1933	1927
	Thousands of quintals					
<i>Beef and veal:</i>						
Consumption	9,660	9,220	8,230	9,170	8,780	8,490
Imported meat net (1).	+ 130	+ 230	+ 650	+ 110	+ 340	+ 540
Live animals imported (+) or ex- ported (—) net (2)	— 10	+ 50	+ 110	— 250	+ 10	— 80
<i>Net supplies drawn from the national live stock</i>	<i>9,540</i>	<i>8,940</i>	<i>7,480</i>	<i>9,310</i>	<i>8,430</i>	<i>8,030</i>
<i>Mutton and lamb:</i>						
Consumption	940	970	870	990	950	1,140
Slaughtered meat imported, net. . .	+ 80	+ 90	+ 190	+ 100	+ 100	+ 130
Live animals imported (+) (1) or exported (—) net (2)	+ 160	+ 150	+ 180	+ 120	+ 170	+ 130
<i>Net supplies drawn from the national live stock</i>	<i>700</i>	<i>730</i>	<i>500</i>	<i>770</i>	<i>780</i>	<i>880</i>
<i>Pig meats:</i>						
Consumption	4,170	3,600	3,760	3,140	3,510	2,960
Slaughtered meat imported, net (1). .	—	+ 110	+ 330	+ 140	+ 200	+ 500
Live animals imported (+) or ex- ported (—) net	+ 20	+ 140	+ 210	+ 30	+ 180	+ 80
<i>Net supplies drawn from the national live stock</i>	<i>4,150</i>	<i>3,350</i>	<i>3,220</i>	<i>2,970</i>	<i>3,130</i>	<i>2,380</i>
<i>Total quantities:</i>						
Consumption (3)	14,770	13,880	13,050	13,400	13,360	12,590
Imported slaughtered meat, net. . .	+ 210	+ 440	+ 1,200	+ 340	+ 650	+ 1,170
Live animals imported (+) or ex- ported (—) net (2)	+ 170	+ 340	+ 1,170	— 100	+ 360	+ 130
<i>Net supplies drawn from the national live stock</i>	<i>14,390</i>	<i>13,100</i>	<i>10,680</i>	<i>13,260</i>	<i>12,350</i>	<i>11,290</i>

(1) Including preserved meat. — (2) Live weight changed into net weight, at approximate coefficients of 60 % for cattle, 50 % for sheep, 90 % for pigs. — (3) Does not include horse flesh.

the home market in 1928, followed by a still more marked decline in the whole-sale prices of imports in 1929; exports of cattle and of meat more than trebled and the importation was reduced to nearly one fourth of the 1927 volume. The determining effect of the price fall on this movement may be the more easily perceived since, at the same time, the rise in pig prices was followed by a reduction of exports and an increased importation of this kind of meat. The deficit of the trade balance was reduced in 1929 to 180,000,000 paper francs, equivalent to 36,000,000 gold francs; or 17 per cent. of the 1927 figure.

From 1929 onwards, the internal trade movements once again followed the two inverse tendencies noted above, in direct relation with the conditions of the home market; price rise in 1929 and 1930, very marked decline subsequently. In 1931 exports fell to the lowest level registered since the war, imports rose considerably and the deficit of the trade balance attained 1,700,000,000 paper francs. From 1932 to 1935 the volume of exports remained small, but there was a fairly well marked gradual recovery in 1935, especially for cattle, pigs and pigmeats; there was a considerable continuous decline in imports, as the application of a policy of protection of the home market had come to accentuate and accelerate the natural effect of the price fall, to an almost unprecedented extent. In 1935, the trade balance showed a slight credit balance of 90,000,000 paper francs.

From the above table (Table IX) a very fairly precise idea may be gained of the influence which the variations in foreign trade movements have had on the home production of meat, the figures shown being based on approximate but sufficiently indicative calculations.

It is quite clear that not all the live stock imported goes directly into consumption, although that is the most usual destination, but whether it is slaughtered immediately or goes to swell the herd numbers, the effect is always that of reducing the net quantity drawn from the national live stock for consumption. The following proportional index figures, show the relative importance of the supplies from abroad as compared with the consumption making it possible to estimate this direct or indirect influence: (net imports +; net exports —):

	1935	1933	1932	1929	Average 1929-1933	1927
	(Percentages)					
Beef and veal:						
Supplies of meat	+ 1.4	+ 2.5	+ 7.9	+ 1.2	+ 3.9	+ 6.4
Supplies of live cattle . .	— 0.1	+ 0.6	+ 2.3	— 2.9	+ 0.1	+ 0.2
<i>Total . . .</i>	<i>+ 1.2</i>	<i>+ 3.1</i>	<i>+ 10.2</i>	<i>— 1.5</i>	<i>+ 4.0</i>	<i>+ 6.8</i>
Mutton and lamb:—						
Supplies of meat	+ 8.5	+ 9.3	+ 20.8	+ 10.1	+ 10.5	+ 11.4
Supplies of live sheep . .	+ 17.0	+ 15.4	+ 21.7	+ 12.1	+ 17.9	+ 10.5
<i>Total . . .</i>	<i>+ 25.5</i>	<i>+ 24.7</i>	<i>+ 42.5</i>	<i>+ 22.2</i>	<i>+ 28.4</i>	<i>+ 21.9</i>
Pigmeat:						
Supplies of meat	—	+ 3.1	+ 8.8	+ 4.4	+ 5.7	+ 16.9
Supplies of live pigs . . .	+ 0.5	+ 3.8	+ 5.8	+ 1.0	+ 5.1	+ 2.7
<i>Total . . .</i>	<i>+ 0.5</i>	<i>+ 6.9</i>	<i>+ 14.6</i>	<i>+ 5.4</i>	<i>+ 10.8</i>	<i>+ 19.6</i>
All meat:						
Supplies of meat	+ 1.4	+ 3.1	+ 8.8	+ 2.4	+ 4.7	+ 9.0
Supplies of live animals .	+ 1.1	+ 2.3	+ 8.6	— 0.7	+ 2.6	+ 1.8
<i>General total . . .</i>	<i>+ 2.5</i>	<i>+ 5.4</i>	<i>+ 17.4</i>	<i>+ 1.8</i>	<i>+ 7.3</i>	<i>+ 10.8</i>

The fluctuations of foreign trade take place in the same sense as the variations in consumption, because they are due to the same cause, the price fluctuations; they accentuate the effect on the national production, or to speak more exactly, on the quantity of home-produced meat placed yearly on the market. This may be seen from the following index figures, which indicate the proportional variations in consumption and those in the net supplies drawn from the national live stock:—

	1934-35 as compared with average of 1929-1935	1935	As compared with 1927			Average 1929-1935
			1933	1931	1929	
Beef and veal:						
Consumption	110	114	108.5	98	108	103.5
Net supplies from national live stock	113	120	112.5	94.5	117.5	106.5
Mutton and lamb:						
Consumption	87.5	82.5	98.5	93	95.5	93
Net supplies from national live stock	90	79.5	84	57	87.5	88.5
Pigmeats:						
Consumption	118.5	141	121.5	102.5	106	118.5
Net supplies from national live stock	132.5	174.5	141	135.5	125	131.5
All meats:						
Consumption	109.5	117.5	111	105	107	110
Net supplies from national live stock	115.5	118	117.5	96	118	111

IV. — The Crisis in Meat Production and the Measures Taken with a view to Overcoming it.

The comparatively wide variations in the meat consumption and in the net supplies from abroad, as shown above, could not fail to have perceptible effects on the home market and on the live stock industry itself. These have already been indicated and it has also been noted that the chief direct cause of these variations is to be found in the frequent fluctuations of an extent marked by the prices of meat on the home market.

Due in part to general economic conditions, these fluctuations represent, in any case, a want of reciprocal adaptation between consumption and the foreign supplies on the one hand, and between consumption and the production of meat, in terms of the animals actually bred, on the other. In other words there is a want of equilibrium in the position of live stock farming. The years 1930 and 1931 marked the most acute stage of this want of equilibrium, owing to the marked decrease in the volume of supplies drawn from the national

TABLE X. — *Variations in Price on the Villette Market, Paris.*
2nd Quality Meat.

	1935	1934	1933	1932	1931	1930	1929	Average 1929-1933
Francs per kg. of meat net weight								
Bullocks	4.78	5.17	5.56	6.81	9.26	10.25	8.72	8.22
Cows	4.38	4.59	5.14	6.39	8.90	10.11	8.44	7.80
Bulls	3.85	4.07	4.71	5.61	8.03	9.45	7.78	5.12
Calves	7.16	7.68	8.86	9.21	11.90	13.52	12.77	11.25
Sheep	10.17	11.24	10.83	10.58	13.46	14.81	14.28	12.79
Pigs	5.35	6.25	9.21	9.32	8.46	11.15	11.85	9.99

	1928	1927	1926	1925	1924	Average 1924-1928
Francs per kg. of meat net weight						
Bullocks	7.21	8.04	8.49	7.72	7.42	7.78
Cows	6.84	7.55	8.22	7.65	7.18	7.49
Bulls	6.28	6.93	7.41	7.00	6.63	6.85
Calves	10.48	10.64	11.48	10.52	9.85	10.59
Sheep	12.12	11.97	11.47	10.87	10.56	11.40
Pigs	10.29	10.55	10.35	8.70	8.33	9.64

	1922	1920	1913	1910	1905
Francs per kg. of meat net weight					
Bullocks	5.07	7.84	1.78	1.70	1.51
Cows	4.73	7.86	1.63	1.56	1.33
Bulls	4.25	7.16	1.41	1.35	1.20
Calves	6.73	11.00	2.33	2.04	1.81
Sheep	8.25	11.96	2.27	2.04	1.97
Pigs	7.00	10.60	1.80	1.57	1.28

live stock, in its turn due to the rise of prices on the market, while, under the influence of this same rise, there was inevitably a larger production of animals.

The consequence was a very marked fall in market prices of meat which lasted through the subsequent years. The extent and duration of this phenomenon clearly form the index of a serious crisis in French live stock breeding for meat production.

It will be seen that the trend of prices is not the same for the different kinds of meat. Keeping to recent years, the indices of variations are as follows:

	1935 in relation to			1934 in relation to 1932	1932 in relation to 1930	1930 in relation to 1928	1928 in relation to 1926	1926 in relation to 1924	Average 1929-1933 in relation to 1924-1928
	1934	1930	1929						
Percentage									
Beef	— 7.5	— 53.4	— 33.7	— 24.5	— 33.6	+ 42.2	— 15.1	+ 14.4	+ 5.7
Veal	— 6.8	— 47.0	— 31.7	— 16.4	— 31.9	+ 29.0	— 8.7	+ 16.7	+ 6.2
Mutton. . .	— 9.5	— 32.0	— 16.8	+ 5.2	— 28.6	+ 22.2	+ 4.8	+ 8.6	+ 12.2
Pork	— 14.4	— 52.0	— 48.0	— 32.9	(1) 21.3	(2) 15.2	— 0.6	+ 18.3	+ 3.6

(1) Compared with 1929; 16.4 % only in relation to 1930. — (2) In 1929; 8 % only in 1930.

Very noticeable changes have thus occurred in the relative price of the different kinds of meat. Taking as basis of comparison the price of beef, the price of the other kinds of meat may be stated as follows:

	1935	1934	1933	1931	1929	1926
			Price of beef = 100			
Veal	—	150.0	159.5	128.5	146.5	135.0
Mutton	192.0	217.0	206.5	143.5	182.5	135.0
Pork	105.5	122.0	169.0	91.5	136.0	132.0
		Average	Average			
	1924	1929-1933	1924-1929	1922	1920	1913
			Price of beef = 100			
Veal	137.5	137.0	136.0	132.5	140.5	131.0
Mutton	142.0	155.5	146.5	162.5	152.5	128.5
Pork	182.5	121.5	124.0	135.0	132.5	101.0

Relatively to the price of beef, the prices of the other kinds of meat have been less during the years of low consumption, but although this observation holds good absolutely, for pork the index figure of which has returned almost

exactly to what it was before the war, it should be noted, on the other hand, that except for the years as indicated, the prices of veal and of mutton have risen on the whole as compared with beef prices.

These observations confirm the conclusion already drawn from the examination of the changes in live stock numbers, *viz.*, that the crisis of over-production is especially marked in the pig production, and this in spite of a large increase in consumption. Mutton prices were especially influenced by the under-consumption recorded in 1931, but the decline followed that of the prices of other meats only at a certain distance, and it would be paradoxical to speak of over-production when the numbers of sheep have continuously diminished. The market for beef is the one which has been the most liable to fluctuations in the demand and for this market the disequilibrium noted above was the most serious and the most difficult to remedy, by reason of the character of this branch of live stock farming; the over-production is more noticeable in respect of calves than in that of bullocks and full grown cattle.

A further fact may be noted: the extent of the price decline becomes accentuated as the product is traced back from the consumer to the producer.

First stage: retail sale in the butchers' shops, wholesale sale on the Villette market. As compared with the average of 1930, the decline on the market was, in 1934, for beef 50 per cent., for veal 43 per cent., for mutton 25 per cent., and for pork 44 per cent. For the retail trade the decline in the same year was only from 31 to 38 per cent. for beef, 23 per cent. for veal, 13 per cent. for mutton, 32 to 34 per cent. for pork. Taking it as whole and establishing a kind of proportion of the quantities of the different kinds of butchers' meat, the decline was 45 per cent. on the market and 25 per cent. in the retail trade. The 1934 index as compared with that of 1914 was 110 for the retail sale, 85 at the production stage for butchers' meat, and for pork the difference was greater.

Taking the second stage of production, the wholesale market, a similar marginal difference is observed, although less accentuated at least for cattle. At the time when the average market price of cattle in the sixteen main stock farming regions in November-December 1934 was 43.3 per cent. lower than the prices at the end of 1931, the decline on the Villette market was only 39.2 per cent.

Summarising it may be said that the price fall of meat at the retail stage was half what it was at the production stage in the stock farming regions.

REGULATION OF IMPORTS.

From 1927 the Government raised the duties on live animals and meat, in order to bring them into relation with the value of the currency and the situation on the home market. The duties were again raised in 1929, then in 1930 by the law of 19 March the Government obtained powers to raise these duties by decree without recourse to a preliminary vote of Parliament; this power was used for pigs and pigmeat.

The incidence of these customs duties may be seen by comparing a number of import charges, such as were established by the Commission of customs values.

TABLE XI. — *Import Duties on Animals and Meat (*)*.

Classification	1st January							
	1926	1928	1930	1931	1932	1933	1934	1935
Paper francs per quintal								
LIVE ANIMALS.								
Calves	(a)	30.00	120.00	200.00	200.00	200.00	200.00	300.00
	(b)	20.00	80.00	100.00	100.00	100.00	100.00	150.00
	(c)	—	—	—	—	—	50.00	—
Cattle, other	(a)	40.00	160.00	250.00	250.00	250.00	250.00	380.00
	(b)	25.00	100.00	125.00	125.00	125.00	125.00	190.00
	(c)	—	—	—	—	—	50.00	—
Sheep, other than lambs	(a)	40.00	160.00	250.00	250.00	250.00	250.00	380.00
	(b)	25.00	100.00	125.00	125.00	125.00	125.00	190.00
	(c)	—	—	—	—	—	50.00	—
Young pigs, per head	(a)	4.00	16.00	22.50	30.00	45.00	45.00	65.00
	(b)	2.25	9.00	11.25	15.00	22.50	22.50	32.50
	(c)	—	—	—	—	—	10.00	—
Pigs, other	(a)	25.00	100.00	150.00	200.00	300.00	300.00	450.00
	(b)	15.00	60.00	75.00	100.00	150.00	150.00	225.00
	(c)	—	—	—	—	—	75.00	—
MEAT.								
Fresh beef and mutton	(a)	50.00	180.00	350.00	350.00	350.00	350.00	520.00
	(b)	35.00	126.00	175.00	175.00	175.00	175.00	260.00
	(c)	—	—	—	—	—	100.00	15.00
Frozen beef and mutton	(a)	50.00	85.00	180.00	180.00	180.00	180.00	270.00
	(b)	35.00	59.50	90.00	90.00	90.00	90.00	135.00
	(c)	—	—	—	—	—	100.00	55.00
Fresh pork	(a)	40.00	144.00	250.00	350.00	500.00	500.00	750.00
	(b)	25.00	90.00	125.00	175.00	250.00	250.00	375.00
	(c)	—	—	—	—	—	100.00	—
Frozen pork	(a)	40.00	85.00	130.00	250.00	260.00	260.00	400.00
	(b)	25.00	59.50	65.00	125.00	130.00	130.00	200.00
	(c)	—	—	—	—	—	100.00	30.00
Hydrogenized tallow for soap making	(a)	0.00	0.00	20.00	20.00	20.00	20.00	60.00
	(b)	0.00	0.00	10.00	10.00	10.00	10.00	30.00
Hydrogenized tallow other	(a)	0.00	0.00	40.00	40.00	40.00	40.00	120.00
	(b)	0.00	0.00	20.00	20.00	20.00	20.00	60.00
Non-hydrogenized tallow for alimentary purposes	(a)	0.00	0.00	50.00	50.00	50.00	150.00	150.00
	(b)	0.00	0.00	25.00	25.00	25.00	75.00	75.00
Non-hydrogenized tallow, other types	(a)	0.00	0.00	0.00	0.00	0.00	50.00	50.00
	(b)	0.00	0.00	0.00	0.00	0.00	25.00	25.00
Lard for industrial purposes	(a)	0.00	0.00	50.00	50.00	50.00	150.00	150.00
	(b)	0.00	0.00	25.00	25.00	25.00	75.00	75.00
Other lard, crude	(a)	0.00	0.00	150.00	350.00	500.00	500.00	500.00
	(b)	0.00	0.00	75.00	250.00	250.00	250.00	250.00
	(c)	—	—	—	—	—	80.00	80.00
Other lard, refined	(a)	40.00	68.00	240.00	500.00	700.00	720.00	720.00
	(b)	30.00	51.00	120.00	250.00	350.00	360.00	360.00
	(c)	—	—	—	—	—	80.00	80.00

(*) Extract from *Government Measures affecting the Prices of Agricultural Products 1936 No 5*.
 (a) General duty. — (b) Conventional duty. — (c) Tax, in addition to the duties.

The comparison cannot however be strictly established as account must be taken of the transport costs (0.25 to 0.50 per live kg. for beef, 0.40 to 0.80 for veal and mutton) and the prices per live weight must be compared, but so far as they go the figures shown in the Table indicate the maximum spread which occurred in 1930, 1931 and for pigs and pig meat in 1929.

The customs duties however proved to afford insufficient protection for the home market. The Government then decided to have recourse to the system of quotas. By a first decree of 30 September 1931 quotas were established on imports of cattle, pigs, fresh, chilled, frozen and salted preserved, etc., beef and pork, including sausages, etc.; quotas were fixed for fresh, chilled or frozen mutton by Decree of 10 November; later on 26 March 1932 a new and last decree established quotas in respect of the importation of live sheep and of horses for slaughtering. These decrees did not apply to Algeria, as not being a foreign country.

TABLE XII. — *Quarterly Quotas allowed to be Imported.*

	4th quarter 1935	2nd and 3rd quarter 1935	1st quarter 1935	2nd quarter 1934	1st quarter 1934	2nd quarter 1933	1st quarter 1932	4th quarter 1931
(number of head)								
<i>Live animals:</i>								
Horses	500	800	500	500	3,000	3,000	n. c.	n. c.
Full-grown cattle	nil	nil	(1) 2,000	(1) 2,000	(1) 12,000	(1) 15,000	(1) 50,000	56,600
Calves	nil	nil	nil	nil	500	800	1,700	1,700
Sheep	15,000	20,000	15,000	15,000	26,500	25,000	n. c.	n. c.
(quintals)								
Pigs	nil	nil	(1) 3,000	(1) 5,000	(1) 25,000	(1) 25,000	(1) 30,400	30,000
Sucking pigs	nil	nil	nil	100	(1) 150	(1) 150		400
<i>Meat:</i>								
Fresh chilled or frozen:—								
Mutton	10,000	15,000	14,000	4,000	18,000	(1) 23,000	20,000	
Pork	nil	nil	nil	nil	10,300	(1) 15,300	21,000	70,000
Beef	nil	nil	nil	nil	15,000	(1)		
Horseflesh	nil	nil	nil	nil	300	25,000	66,000	
Salted or otherwise pre- pared	5,000	3,625	5,000	5,100	8,650	8,650	7,650	7,650
Sausages, etc.	1,400	1,400	1,400	2,100	2,000	3,500	(1) 1,000	(1) 1,000
Preserved meat	nil	nil	nil	nil	2,400	2,500	7,000	7,000
Lard	nil	nil	nil					

(1) Consigned exclusively to the Saar territory. — (2) Including 30,000 quintals for the Saar. — (3) Including 20,000 quintals for the Saar. — (4) 100 quintals destined for the Saar. — (5) By Decree of 3 February, the quota of 25,000 to 40,000 head of pigs and 15,000 quintals of fresh or frozen meat which was accorded to Morocco has been withdrawn. — (6) Quota excluding imports coming from Italy.

By decree of 3 February, the free quota allowed in Morocco had been abolished; the importing of live animals and meat coming from the Saar territory was prohibited, in order to ensure the efficacy of the measures taken, in view of the special customs regulations in force in the Saar.

It will be noted that the quotas have been gradually reduced and for certain categories, that at least in theory no further imports from foreign countries have been admitted; quantities imported are apart from quota, in consequence of special preferential agreements.

A statement may be made of the quantities annually admitted for importation under the quota system in the three last years, omitting the quantities admitted for the Saar territory.

	1935	1934	1933	1932
		number of head		
Horses for slaughter	2,600	4,700	12,110	(1)
Fully grown cattle	nil	nil	nil	30,000
		quintals		
Calves	nil	nil	nil	7,400
		number of head		
Sheep	70,000	71,500	100,000	(1)
		quintals		
Fully grown pigs	nil	5,000	20,000	34,000
Sucking pigs	nil	50	200	1,600
Fresh or chilled meat:				
Mutton	54,000	69,000	87,200	88,000
Pork	nil	10,300	25,900	72,600
Beef and other	nil	15,300	74,700	215,000
Salted or otherwise prepared meats.	17,250	22,900	34,600	33,850
Sausages, etc.	5,600	7,900	8,700	14,000
Preserved meats	nil	2,400	12,500	26,000
<i>Total of meat</i>	<i>76,850</i>	<i>127,800</i>	<i>243,600</i>	<i>459,450</i>
Total imports	279,000	346,000	485,000	588,000

(1) Quota fixed from second quarter of year only.

It may be noted that the imports apart from quota have only slightly diminished since 1933 and that the contraction of the total imports is due to the extent of four-fifths to the quota system.

IMPROVEMENT AND RE-ORGANISATION OF THE MEAT MARKET.

The measures for protecting the home market against foreign imports were insufficient to prevent the onset of the crisis of production of meat, as that had to do with much deeper causes, the effects of which had merely been accentuated by the mass importations of 1930 to 1932.

The margin between the production price and the retail price of meat has been noted above. It is in part due to a general economic cause, the height of the fiscal charges, transport costs and labour costs, but it is also to a certain extent the consequence of two special phenomena: the difficulty in selling the poorer quality meat and the offals, fats, skins, and on the other hand the very great centralisation of the meat market in France.

The fact of this centralisation will appear when it is observed that the Paris market reconsigns annually to the provinces 7 to 10 per cent. of the meat there consumed and that the regional abattoirs are relatively few and are not always sufficiently well equipped.

Table XIII shows that although the re-consignments from Paris to the provinces remain large—the organisation in question being of a kind that is difficult to modify in a short time—they tend to be made increasingly in the form of killed meat and to a less extent in the form of live animals. In a similar way the arrivals of killed meat at the central Halles have acquired, especially in the case of veal and mutton, a growing importance in comparison with arrivals of live animals.

There is thus a very decided tendency, if not to decentralisation of the market at least to that of the slaughtering.

The work of improvement and re-organisation of the meat market should include, so far as possible, plans for the reduction of live stock numbers by the elimination of damaged or diseased animals—this applies in particular to cattle—but also especially, for the reduction of the margin between prices at the production stage and the retail prices of meat; in addition steps should be taken to obtain better prices for meat, offals, etc., and to encourage regional slaughtering.

These various points have been made the subject of the law of 16 April 1935; this law for the improvement and re-organisation of the meat market was the subject of much careful previous discussion, both among the vocational associations and in Parliament, and includes two groups of provisions, as indicated in its title.

For the *improvement* of the meat market, provision is made for the slaughter of tuberculous or diseased cows to be carried out by the Veterinary Service on the basis of compensation reckoned on the actual market value of the animal so slaughtered.

It is, in addition, made compulsory to display in butchers' shops lists of retail prices, in order to ensure the control and customs protection of the by-products, animal fats and lard. Further, regulations have been made under the public administration for ensuring supplies to the troops of meat of national origin, to the exclusion of foreign imported meats.

TABLE XIII. — *Consignments and Re-consignments
at the Paris Market and Abattoirs.*

	1933	1931	1929	1927	1924	1922
(Thousands of head).						
<i>La Villette market:</i>						
Full-grown animals: Consignments	392	307	421	381	323	378
Re-consignments	106	177	120	125	127	152
"	27 %	25 %	29 %	33 %	39 %	40 %
Calves: Consignments	210	190	208	204	186	212
Re-consignments	75	72	97	84	98	93
"	34 %	38 %	46 %	42 %	48 %	44 %
Sheep: Consignments	1,000	980	1,101	1,211	1,052	1,099
Re-consignments	168	177	187	229	253	256
"	17 %	17 %	17 %	18 %	24 %	24 %
Pigs: Consignments	218	283	279	243	325	396
Re-consignments	134	178	164	157	183	221
"	61 %	63 %	59 %	65 %	56 %	56 %
(Thousands of quintals).						
<i>Abattoirs:</i>						
Butchers' meat: Consignments	1,634	1,374	1,577	1,461	1,263	1,229
Re-consignments	901	646	785	603	500	501
"	55 %	47 %	50 %	41 %	40 %	40 %
Sausages, etc.: Consignments	467	481	425	245	275	—
Re-consignments	192	178	132	67	32	35
"	41 %	37 %	31 %	28 %	12 %	13 %
<i>Central " Halles ":</i>						
Consignments:						
Beef	331	283	331	292	212	263
Veal	403	364	392	373	313	332
Mutton	138	144	117	131	103	108
Pork	99	91	82	88	104	112

For the *re-organisation* of the meat market, provision is made in the law for the installation with State assistance of establishments intended for the local slaughter of stock with facilities for the forwarding of the slaughtered products to the consuming centres.

The Chambers of Agriculture, on being consulted on the question, are found to be opposed to the establishment of large regional abattoirs working as factories and in co-operative form. Experience has proved that such establishments could not maintain normal working for want of adequate trade channels; hence the Chambers have instead encouraged the formation of small establishments, communal or intercommunal, or managed by syndicates, well equipped and designed to meet local consumption requirements.

Conclusion.

The foregoing study has emphasised the extent and the frequency of the fluctuations in production, consumption, external trade and meat prices, fluctuations which have resulted in a situation of great instability and finally in a serious crisis marked by a very sharp decline in prices. Under the influence of this very price decline a certain equilibrium is tending to become re-established between production and consumption; in 1935, the margin between the prices at the production stage and the retail prices was reduced and some slight rise was noted.

Protected against foreign competition by a system of fairly severe quotas, benefiting by the measures included in the law of 1935, the position of meat production in France should normally show improvement. It is however too soon to judge of the results of the law from the point of view of re-organisation, which, even on the market, must be a work requiring time and very careful handling.

P. DE VIGUERIE.

THE MECHANISATION OF AGRICULTURE IN LATVIA

SUMMARY. — I. *Mechanisation as one of the fundamental problems of agriculture in Latvia.* The inadequate supply of farm workers. Development of intensive cultivation. The prices of agricultural machines and their present number in Latvia. Technical conditions for the use of machinery; soil; shape of the fields; crops; the question of horses. Number and work of societies for the joint use of agricultural machines. — II. *Measures taken by the Government to encourage the mechanisation of agriculture.* Development of agricultural machinery stations and regulation of their working. Law on the improvement of the quality of machines. Standardisation. Mechanisation of the transport of milk. The financing of mechanisation.

I. — MECHANISATION AS ONE OF THE FUNDAMENTAL PROBLEMS OF AGRICULTURE IN LATVIA.

From the first, it has been the endeavour of the present Government of Latvia to improve the conditions of agriculture, but serious difficulties have been encountered, among which one of the greatest is the inadequate supply of farm workers.

There are approximately 150,000 farm holdings in Latvia on which farm workers are employed in addition to members of the holder's family. Of the four provinces of Latvia—Zemgale, Vidzeme, Kuzeme and Latgale—an adequate number of farm workers is to be found only in the last. In the three first provinces, the farmers are obliged to bring in from the province of Latgale and even from other countries, especially from Poland, Lithuania and Estonia, the large numbers of farm workers they require. In these three provinces, there are some 100,000 farm holdings on which the number of farm workers is insufficient. On the other hand, the statistics show that farm workers have been brought into these provinces from that of Latgale and from abroad, in numbers gradually increasing from 1933 to 1935: viz., 48,347 in 1933, 63,116 in 1934 and, according to the latest information available, 73,475 in 1935. Of these, 84.2 per cent. were farm workers, and about 8 per cent. forestry workers, etc. In 1935, approximately 35,000 farm workers were brought in from foreign countries.

According to the data of the State Statistical Bureau of Latvia, the proportion of farm labour introduced in 1935 is as follows:

	Number of workers introduced per 1000 farm workers	Index-numbers taking Zemgale = 100
Into Vidzeme (Livonia)	470	69
Into Kurzeme (Courland)	369	54
Into Zemgale	680	100

In Latgale, the number of foreign farm workers brought in is negligible. On the other hand, it is reported that in the other Latvian provinces agricultural production now depends on the introduction of labour, for the most part foreign, and that this is especially noticeable in the province of Zemgale. According to a statement made by the Government, if for any reason this introduction of labour were suspended, a normal agricultural production would become practically impossible. This explains the special importance attached by the Government to the question of farm labour among all questions relating to the improvement of the conditions of agriculture, an importance increased by the fact that Lithuania and Poland do not encourage the emigration of their farm workers. It will thus be necessary to deal with the matter in such a way as to make it possible for the farmers to dispense with imported labour.

	Absolute figures					Index-numbers (1928 = 100)				
	1928	1931	1934	1935	1936	1928	1931	1934	1935	1936
Number of workers introduced from foreign countries	12,364	24,020	22,854	34,209	40,000	100	194	180	276	324
Wage of a seasonal farm labourer in lats	361	328	193	220	188	100	91	53	60	52
Wage of a female seasonal worker in lats	250	229	149	170	166	100	81	59	68	67

The above table presents a survey of the introduction of foreign farm workers, as well as the proportion each year, taking 1928 = 100, also the wages of Latvian workers, in Latvia.

According to the preliminary data of this table it will be seen that, side by side with the increase in the importation of foreign labour, the wages of the farm workers fell. The *Latvijas Lannsaimitis*, the official organ of the Latvian Chamber of Agriculture, shows (No. 6, 1936) that the wages of the farm workers in Latvia are none the less still at the present time much higher than in Lithuania and in Poland, whence comes the greater proportion of the foreign farm labour.

The wage paid to a seasonal worker in 1935 was 220 lats for six months and a half and 34 lats per month, while for the same period the wage in Poland would be 10 lats, in Lithuania 13 lats and in Estonia, given the low rate of the Estonian currency, 11 lats.

The relative fall of wages in agriculture has seriously affected the conditions of farm workers in Latvia and stimulated their migration to the towns, although no large scale industrial and commercial activity exists there. Taking the period 1927 to 1931 as a base equal to 100, the railway transport of goods fell from 116 in 1929 to 57 in 1932, and then rose to 76 in 1936. Traffic fell even to 31 in 1934.

Increase in Crops, in Stock Farming and Number of Work-days from 1929 to 1935.

	Increase in crops (in ha.) and live stock (in head)	Increase in work		
		Number of work-days	Percentage	Number of workmen
Potatoes	28,500 ha.	1,812,600	10.75	12,082
Sugar beets	11,140 "	1,785,742	10.59	11,903
Wheat	60,400 "	1,427,116	8.46	9,512
Other crops	146,150 "	1,603,985	9.51	10,693
Crop total	246,190 "		39.31	
Cattle	181,500 head	5,517,600	32.71	18,391
Pigs	278,600 "	3,343,200	19.82	11,144
Horses	19,000 "	216,600	1.28	722
Sheep	257,900 "	1,160,550	6.88	3,868
Live stock total	737,000 "			
Sum total	—	16,868,393	100 —	78,316

One of the chief causes of the shortage of farm labour is undoubtedly to be found in the great change that has taken place in respect of the utilisation of arable land. In the last few years there has been a development of the sugar beet industry and at the present time the sugar production is adequate to the

national consumption requirements. There has been a continuous increase in the area of lands planted in sugar beet, which in 1935 was about 16,000 hectares. An extension of potato growing has also taken place, from 80,000 ha. before the war to 110,000 ha. at the present time. This increase is largely due to the law on the mixture of alcohol in motor spirit. A similar expansion is to be noted in other kinds of cultivation and also in the live stock numbers. The number of work days was bound to increase, as is seen from the accompanying table (p. 295).

The factors that have rendered necessary the mechanisation of the different branches of agriculture, as well as the progress made in the use of machinery, can be seen from the following table:

	1923	1934	1935 (preliminary data)
Arable land	100	115	125
Manual labour	100	126	128
Live stock	100	214	311
Agricultural machinery	100	165	221

The number of agricultural workers in Latvia is seen to have increased by 28 per cent. during the last 12 years. The same increase may be noted with regard to the area of arable land, while the number of live stock is more than 200 per cent. higher than in 1923. The mechanisation of agriculture is necessitated firstly by stock breeding, and secondly by agriculture itself; as regards the different crops, potatoes are the most important, sugar beet coming next.

Even taking into consideration, however, the cultivation of wheat, a 40 per cent. increase only in the work-days per annum from 1929 to 1935 has been due to arable farming, while the increase due to stock farming and especially to cattle breeding has been one of 60 per cent.

If the Government proposes to restrict the importation of foreign farm labour, it is chiefly to these latter branches of farming that there will have to be applied either a decrease in production or a change in the crops grown, or else a rationalisation of cultivation methods.

If the increase in work-days during the year has brought about so large an importation of agricultural workers, it is because of the high prices of agricultural machinery and implements made in the country. The Secretary General of the Chamber of Agriculture reported at the meeting of the Latvian Chambers, in April 1936, as the principal causes that have prevented the natural trend of the mechanisation of agriculture in the country since 1929: the crisis in agriculture and the low purchasing power of the Latvian peasants, while the prices of agricultural machinery and implements of home manufacture are relatively high. These prices have even increased since 1930. The Secretary General at the same time drew attention to the fact that, in other branches of production, the prices of raw materials and of fuel have been considerably reduced: the price of iron declined from 251 lats in 1929 to 159 lats in 1934; the corresponding price declines for cast iron are from 123 lats to 55 lats, from 34 to 21 lats for coal, from 53 to 28 lats for coke, etc. The wages of skilled workers in metallurgy and ma-

chinery have also undergone a reduction of 25 per cent.: in fact, a workman, in 1930, used to receive 81 centimes in Latvian money per hour, whereas, in July 1935, not more than 60 centimes was paid.

At the same time the agricultural machinery and implements manufactured in the country are more expensive than those imported from abroad. The Secretary General of the Chamber of Agriculture showed that during the years 1923-1929, the number of potato lifters increased at the rate of 492 per annum, but, from 1929 to 1935, this rate of increase fell to about 200. The purchase of these machines has diminished, as importation from abroad has been prohibited, and the quality of the machinery produced in Latvia was certainly not such as to encourage buying.

Number of Agricultural Machines in Latvia.

	1923	1924	1935	Increase from 1929 to 1933
Mowers	16,000	28,000	40,000	11,400
Horse rakes	16,300	24,100	32,000	7,900
Harvesters	14,100	19,400	24,000	4,600
Seed drills	3,700	7,800	11,500	3,700
Potato diggers or lifters .	700	3,700	4,900	1,200
Tractors	127	313	416	103

The average increase in the number of agricultural machinery during the last 6 years was not very considerable: the yearly average being about 1,900 mowers, 1,632 horse rakes, 767 harvesters, 617 seed drills of various types, 200 potato diggers, and only 17 tractors.

The high price of agricultural machinery and the low purchasing power of Latvian peasants are not the only obstacles to the mechanisation of agriculture: the other and the most serious obstacles include the absence of soil improvement and the shortage of horses.

The period during which the soil can be worked in Latvia is very short, although the climatic conditions are fairly good.

This shorter period of agricultural work in Latvia, while not explicable on purely climatic reasons, is due to the fact that only one per cent. of the lands which stand in need of improvement have actually been improved; soil improvement prolongs the season of farm work by one month.

On non-improved lands there is little possibility of using farm machines; much work is in fact required to carry out the harvesting on wet lands by means of sickles, potato-diggers, etc. A large number of machines cannot be used on unimproved lands as they are on improved lands, and accordingly much more labour is required. Sometimes, as recent examples have shown, it is quite impossible, during a period of high precipitations, to proceed to harvesting, on fields not scientifically drained, using farm machines. It is this which caused the President of the Chamber of Agriculture to say that, if the land improvement operations

can be speeded up by one fourth, it will become possible to economise each summer 70,000 work days. In view of the uncertain conditions of production, it would be undoubtedly too risky to depend entirely on machines, without maintaining an adequate number of farm workers. Moreover the Latvian Ministry of Agriculture has stated that a certain number of farm workers will always be essential even on farm holdings which are well equipped with machines. Now, as the number of Latvian farm workers tends to fall below the minimum at the present time necessary to the national agriculture, even if there should be a considerable increase in the number of machines and technical equipment, it will not be practicable to reduce, except to a negligible extent, the numbers of workers introduced from abroad.

At the Scientific Congress of Farm Experts, held in January last, it was remarked that the crop yields of the unimproved land in Latvia are far from regular. Any reduction in cereal growing would thus involve considerable risk, as it would no longer be possible to distribute, with any regard for proportion, the farm labour during the summer. This distribution is at present rendered possible by the relatively prolonged cultivation of the winter sown cereals, which assists in bringing about a more regular distribution of work during the sowings and harvest.

In Latvia, the majority of the fields are about half a hectare in area. When farm machines are used on fields of this size, their work capacity is certainly much less than on fields of over 10 hectares. It is for this reason that machines are not used to any great extent, at least by the majority of farmers. It should be noted further that their work capacity is lowered by the turnings necessary at the corners of the fields.

The smaller the area of the field the more often are turnings necessary, and in consequence there is a loss of time shown on the following table:

*Loss of Time due to Turning of Machines as Percentage
of the Time Employed.*

	Length of perimeter of field in metres			
	50	100	500	1000
Ploughing	25	13	2.6	1.5
Harrowing	30	15	3.0	1.5
Sowing by drill	40	20	4.0	2.0
Reaping with harvester	24	12	2.4	1.2

It appears from this that on fields of small dimensions, the loss in output of work is about 22.8 to 38 per cent. There has to be added the moving about of the machines which requires more time the smaller the field is. The work output of a horse seed drill or a horse reaper is about 4 to 5 hectares per clear day of 10 hours. If machines are used on small sized fields, they will have to be moved from one field to another 5 to 16 times in the day, and the loss in work output

may be, according to distance, 20 per cent. greater. The total loss in the work output, if the loss on the turnings already mentioned be added, will be from 33 to 50 per cent. This applies not only to machines, but also to horses. If farm machines are to be employed in Latvia without having to reckon for losses in output of this nature, it will be essential to cultivate on longer furrows and to introduce land drainage. The form of the fields is important in connection with the use of agricultural machines on sugar beet crops, and also on other crops, the extension of which in Latvia has contributed in a marked degree to the increase farm labour imported from abroad.

The difficulties which appear in Latvian agriculture, in relation to the more intensive cultivations, such as those of potatoes and sugar beet, are easily explicable on considering the conditions of cultivation of the latter plant. The work of thinning cannot be delayed without considerable injury to the crop. It has been found that in Latvia, if the spacing of the plants is 25 cm., a delay of 30 days in thinning increases the quantity of work required by 140 per cent. and reduces the crop by 20 to 32 per cent. Thinning, when done by non-specialised workers is much more costly than when the workers know their work thoroughly. With equal conditions of work, a non-specialised worker will be able to thin 40 metres of beet in one hour, while an expert worker will thin 200 and even 300.

Moreover the thinning, which is the most important part of the work of beet cultivation, is almost impossible without a spade; but the Latvian farm worker does not know how to use a spade, a fact which explains why this crop requires in Latvia much more work than in other countries where the spade has been traditionally in use. Thus the present economic conditions demand the replacement of farm labour in sugar beet cultivation as far as possible by the use of machines. As already stated, however, for mechanisation long furrows are essential and these are seldom found in Latvia; otherwise it is very difficult to substitute mechanical cultivation for manual labour.

It should also be noted that the mechanisation of sugar beet growing is difficult not only on account of the small size of the fields in Latvia, but also because, for the use of machines to be profitable and for sugar beet farming to be possible at all, fields of more than 2 hectares must be available.

On the contrary in Latvia the area of sugar beet crops has diminished from 15,000 ha. in 1935 to 12,000 ha. in 1936, or by 20 per cent., while in the same period the number of farm holdings engaged on this cultivation has increased from 16,000 to 20,000. The Ministry of Finance has approved contracts with the sugar beet growers, in accordance with the rules drawn up by the Latvian Chamber of Agriculture, guaranteeing to the owners of an area of arable land up to 8 hectares, the purchase of 7.5 tone of beet; of 15 tons for an arable area of 8 to 20 hectares, and of 30 tons for larger areas. The object is to make it possible for a fairly large number of peasant farmers to take part in this cultivation, although the total area devoted to sugar beet is not large and represents only one per cent. of the total area of arable land. In addition the Latvian peasant farmer receives 76 per cent. of the selling price of sugar as compared with 46 per

cent. in Romania, 67 per cent. in Italy and 69 per cent. in England. This distribution of sugar beet growing over so large a number of farm holdings makes it practicable to use more freely natural manures; this tends to reduce the importation of the commercial fertilisers which are needed if this crop is concentrated on the larger holdings. In the opinion of the Government, the distribution of this crop over holdings of small size reduces the employment of seasonal foreign workers and also enables the farmers to avoid loading their horses too heavily.

The use of agricultural machinery is complicated by the question of horses; much inconvenience is caused by the fact that the small Latvian horses find difficulty in drawing the heavy agricultural machinery. This horse is very suitable for work where turning is necessary, and also gives good results in short furrow fields. On the other hand, the long furrows tire it out and shorten its life; in fact, in Zemgale, where the fields have longer furrows, the small horses retain their working capacity for a much shorter period than in Livonia, where the furrows are shorter. Zemgale is beginning to suffer from a shortage of horses; also the necessity arises for a horse which can easily adapt itself to the conditions of a region where the utilisation of farm machines would be advantageous. The type of horse generally considered to be the most suitable for the conditions of Zemgale and for the use of agricultural machinery is the large size Ardennes. On the other hand, it cannot be employed in fields where frequent turning is required, unlike the light Latvian horse for which turnings give the necessary opportunity of a pause for rest. In Latvia, a horse must have the characteristics of a trotter. The academician Middendorf notes the good gait of the Ardennes horse and its capacity for working on wet soils and especially its docility. This last characteristic is the more important where the cultivation of sugar beets is concerned.

The shortage of horses is an important feature of Latvian agriculture at the present moment; it has already lasted for many years. The territory of Latvia suffered greatly during the world war and was completely laid waste. After the war, when this country became an independent State, the number of horses was found to be reduced by a third, and, moreover, as the best horses had been requisitioned, land owners were left with the poorest types. The total head increased from 260,000 in 1921 to 340,000 in 1924, but this number was only attained by importing horses from Lithuania. After the war, the importation of horses into Latvia became very considerable; in 1924, about 17,000 horses were imported, but this was the maximum. At the present moment, these animals are old. Calculating 6 per cent. of 375,000 horses, there should be about 23,000 colts not more than one year old in Latvia, while in reality, there are only 15,000. Accordingly, there is a shortage of 8,000 colts per year to maintain the numbers. In actual fact, this figure should be much higher, for, as stated, a large proportion of horses in Latvia are imported from abroad, and a certain number of Latvian horses would be necessary to cause this importation to disappear. At present, the import is fixed at 2,000 animals per year, but according to the Ministry of Agriculture, by 1940 this importation will have entirely ceased.

Horse breeding is much more difficult in Latvia than in Lithuania. A quintal of barley in Latvia costs about 11 lats, while the corresponding price in Lithuania

is from 5 to 6 lats. Again the horses bred in Latvia cost much more than those imported from Lithuania, and do not find any buyers owing to the low purchasing power of the Latvian peasant. Thus in Latvia, there is a relatively large number of old horses. All these circumstances result in maintaining the high prices for horses, prices which moreover tend to rise even higher. In 1932, the average price for a horse was 148 lats, while in December of the same year, it had already increased to 172 lats; in April 1934, the price was 196 lats, in February 1935, 194 lats, and in March 1935, 208 lats. According to the data of the State Statistical Bureau of Latvia on the prices for March 1936, the average price for a horse in Zemgale has increased to 380 lats. On the other hand, these prices are still too low considering the expenses entailed in rearing a horse in Latvia, which amount to 700 lats. Besides, these costs are not in proportion to the purchasing power of Latvian farmers while the high prices result in considerably fewer horses being employed on farms. It is chiefly at Zemgale, the most important wheat-growing centre of the country that this shortage of animals is especially felt. This region has the best and most important production of wheat, sugar beet, etc., but there are too few horses by 25 per cent. of the total number, that is to say, by 80,000 head. As far as possible, these should be replaced by tractors.

The position of the associations for the joint use of agricultural machinery may be seen from the following data, supplied by the President of the Co-operative Section of the Chamber of Agriculture of Latvia, in respect of the year 1934.

	Associations for the use of thresh- ing machines (average)	Associations for the use of grading and other machines
Value of machinery	11,373 lats	1,145 lats
Shares of members	3,577 "	391 "
Sinking fund, etc.	7,349 "	982 "
Creditors	3,555 "	221 "
Received for the use of the machinery . .	2,873 "	150 "
<i>Expenses</i>		
Wages and lubricating oils	990 "	21 "
Repairs	406 "	12 "
Interest	172 "	7 "
Insurance	85 "	3 "
Depreciation	553 "	76 "
Profits	562 "	60 "
Losses	647 "	126 "
Number of members per association . .	18	17

On more close examination of these data, it will be remarked that the number of members is very limited; it follows that the membership fees do not suffice to pay the expenses of the associations, the existence of which, therefore, depends

on the profits coming from farmers who are not members, that is to say, through the market or in competition. This is very difficult, especially for associations for the joint use of threshing machines. Besides, out of 450 associations for the joint use of machinery founded in Latvia after the world war, only 291 are still in existence, of which 250 are actually functioning. Among these, 117 are societies for the joint use of threshing machines, 154 for that of grading machines, 21 for winnowers, 21 for fertiliser spreaders, 11 for clover seed drills, 11 for potato diggers, 4 for harvesters, and finally, 29 for timber cutting machinery.

Generally the association is dissolved because the machines are not sufficiently utilised. Moreover, the associations contracted heavy debts,—from 20 to 22,000 lats at an interest of 12 per cent. per year,—in order to buy the machines as purchase was made when prices were high. The interest, the depreciation, wages, lubricating oils, repairs and other expenses amount to 6,000 lats per annum. In order to pay this sum, 13,000 quintals would have to be threshed a year at 50 Latvian centimes a quintal, and this is only possible when also working for farmers who do not belong to the association. The President of the Co-operative Section of the Chamber of Agriculture of Latvia notes that even now when prices of machines are reduced and credit is easier, some of these associations encounter serious difficulties because their machines are not sufficiently utilised.

The insufficient utilisation of machinery is not only due to the limited number of associations, but also to the changes which agriculture has undergone in Latvia during recent years and to the difference between Latvia and the countries where the use of machinery is diffused. The absence of adequate land drainage, the shortage of horses, etc., may be mentioned here.

The poor results obtained from the steam threshers appear due to the obsolete type of machine and to the little use in practice; this refers chiefly to districts where wood is scarce. The Director of the Forestry Department, in March, 1936, informed press representatives that, at Zemgale, each farm could obtain only 3 cubic metres of wood for burning, while formerly the quantity allowed to the peasants by the Forestry Department was considerably greater. Firewood can still be bought on the market at the present time, but the prices are so high that the farmers do not buy it. The shortage of firewood is leading to the replacement of steam locomotives by tractors for which the fuel is becoming cheaper, and it is seen that everywhere locomotives are being sold and tractors bought.

This shows that the liquidation of the societies for joint utilisation of machines is not due simply to defects in their organisation, but that it is a result of the economic situation of recent years and of the policy of the Latvian Government.

II. — MEASURES TAKEN BY THE GOVERNMENT TO ENCOURAGE THE MECHANISATION OF AGRICULTURE.

The liberation of Latvian agriculture from foreign imported labour will be secured rather by the mechanisation of agriculture than by any endeavour to check the importation of foreign farm labour, and the same policy will conduce

to the solution of the horse question which for many years past has become a real crisis.

The Government has made considerable efforts to increase the number of the stations for joint utilisation of farm machines. It was remarked by a special committee of the Ministry of Agriculture in 1935 that the results of the work of Latvian farmers are entirely dependent on climatic conditions, since they do not possess an adequate number of farm machines. To the question: "Why is so little progress made in the utilisation of machines, especially of the heavier type?" the Minister of Agriculture replied: "Latvian farms, particularly those on which the area of arable land is small, cannot buy the heavier and more costly farm machines as the earning capacity of these is not sufficient and accordingly it does not pay to purchase them. It is the business of the Ministry to find the way of overcoming these difficulties. There are in existence already stations and associations for the joint utilisation of machines. If in some cases these stations are in an unsatisfactory condition, that is not the fault of the station, but of the manner of working them. It is not necessary to suppress them, but it is necessary to alter the system of administration. The Ministry of Agriculture proposes to organise, during the summer of the present year, stations utilising motor lorries and motor cars, driven by skilled workers receiving pay directly from the State. These machines will be placed, at low rates of hire, at the disposal of the farmers, and it will be the business of the stations to help the farmer to carry out agricultural work or transport which he cannot undertake in isolation. While thus coming to the aid of farmers, the opportunity will be afforded of making experiments with machines in agriculture. If good results follow, it will be open to the farmers themselves to diffuse the use of machines, with Government aid, wherever there is need."

Some months later, the Minister of Agriculture established the rules for the use of tractors for stations under the control of the Ministry as follows. The tractors are the property of the Ministry of Agriculture, but the administration is entrusted to the organisation receiving them, together with all liability. The driver of the tractor is also appointed by the organisation; the appointment is ratified by the Ministry who pays up to 200 lats per annum to the organisation to enable it to pay the driver. A maximum rate is fixed for the use of the tractor and of farm implements. Four stations have already been allotted tractors, and motor cars have been assigned to a larger number.

In view of the additional charge on the trade balance resulting from the increased importation of farm machines, the Government has already taken the first steps towards the regulation of production and importation. It has been recognised that foreign machines are essential to the work of the Latvian farmer, but to avoid the introduction of poor quality brands, importation is regulated by means of a special law.

On 7 May of this year the Government promulgated a special law on the inspection of farm machines and implements. "All machines and all implements used in agriculture, whether manufactured in Latvia or introduced from other countries, are subject to the control and inspection of the Ministry of Agriculture." From the following paragraphs there will appear the full importance

this law may have in respect of the improvement of the quality of farm machines and implements.

" 2. In order to carry out this inspection, the Ministry of Agriculture is empowered to require from every manufacturing and trading firm, and without compensation, samples of machines, parts of machines and implements as well as of the materials used in their manufacture".

" 4. The Ministry of Finance is empowered, on the proposal of the Ministry of Agriculture, to prohibit the manufacture or the sale on the market of any machine, implement or part of machine considered, after inspection, not to give good results, and the Ministry is further empowered to give instructions for the modification of machines, implements and of the material used in their construction. It has the right to ascertain whether the manufacturing or trading firms in question are satisfactorily conforming to the instructions issued".

" 7. On the proposal of the Ministry of Agriculture, the Ministry of Finance is empowered to punish any infringement of this law by a fine up to 2,000 lats."

The Chamber of Agriculture has found from past experience that only the largest farms can afford for their own private use, a harvester, a mower and a horse rake. Small or medium sized farms can easily manage by sharing these implements between them. One potato digger could quite easily suffice for the needs of 5 or 6 medium sized farms, and 2 or 3 large farms. Consequently, in Latvia, besides the machinery already existent in the country, about 27,500 harvesters, 19,500 mowers, 23,600 horse rakes and 13,300 potato diggers are required.

It is agreed that imported machines must respond to the following requirements: 1. The type of machine must be examined and recognised as fit for use. 2. It must show an improvement from the point of view of construction and material on the machines manufactured in the country. 3. The delivery of spare parts must be guaranteed at a reasonable price. 4. A machine of foreign manufacture cannot be imported if there is already in existence in the country a similar machine, warranted by the manufacturer as corresponding in quality to good foreign brands, and to the requirements of agriculture. 5. The variety of types in the corresponding groups of machines must conform to the requirements of the standardisation.

Model machines must be imported and exhibitions of these machines organised in such a way as to allow of their demonstration to the persons interested. It should also be made possible to compare the various types of machinery in the different districts.

These new stations are endeavouring to diffuse the utilisation of motor cars and tractors which will compensate for the shortage of horses from which agriculture is suffering. Machinery for ploughing and harvesting will no longer be neglected, and the stations up to a certain point will provide for the replacement of manual labour; in this way, the normal production of Latvian agriculture will no longer be dependent upon foreign labour.

The machinery stations are organised on a different basis from the associations for the joint utilisation of machinery, where the output of work of the ma-

chines was unsatisfactory, owing to the shortage of fuel oils and the high price of fuel wood. On the contrary, the tractors utilised in the new stations can easily be transported and are not costly to work.

It is also very convenient to import farm machines for which the delivery of spare parts at reasonable prices is guaranteed. Of all the motor car and tractor manufacturers, Ford offers the best conditions in this respect, as the spare parts of this make of machine can easily be obtained anywhere. As a result however of the trade agreement concluded between Latvia and Germany, and of the export premiums arranged by the latter country, Hanomag-Diesel tractors are being imported by Latvia. The price of these tractors of 36 to 40 HP is about 7,750 lats, that is 25 to 30 per cent. cheaper than in Germany. It should be noted that these tractors require very little fuel oil: only 200 grammes of fuel oil per hour per HP. For these tractors, a saving is guaranteed of 75 per cent. on locomotive steam engines, 50 per cent. on petrol or benzine power tractors and about 80 per cent. on motor spirit tractors. This all facilitates the sale of German products in Latvia. It should be mentioned that during recent years, the Latvian farmers have been buying more and more machines from U. S. S. R. as they are cheaper and the quality has appreciably improved. This accounts for the diversity in types of machines.

There are still many instances where the mechanisation of agriculture is absolutely necessary. Attention is drawn to the question of hydraulic plant, which has not yet been satisfactorily solved. Water is much dearer in the country even than in Riga where it has to be bought. The water of 90 per cent. of wells is fit neither for drinking nor for cooking purposes.

As well as hydraulic plant, many machines are required for agriculture. One of the most important branches of farming which should be mechanised to a far greater degree than at present is the milk industry.

For some time an endeavour has been made to group all dairies together and to centre the butter production in one principal organisation. There was much discussion last year about increasing the number of separating stations, but in the Chamber of Agriculture many arguments have been put forward for the liquidation of these stations, the proposal being to organise the milk delivery by motor vans. The view is that it will be impossible to improve the quality of the butter for export and to lower the price as long as there are so many separating stations in existence. One great obstacle to the mechanisation of milk transport, which would leave a greater number of horses free for work in the fields, is the small number of roads, especially in comparison with Denmark. At present, conditions are such that farmers seek to economise at the expense of the dairies by delivering the milk not every day as they should do, but every second or third day. Accordingly, with this milk it is not possible to make a first quality butter for export, hence the considerable losses on the export of Latvian butter.

These are the reasons which have brought the question of mechanisation of milk delivery to the fore. If the milk delivery could be effected every day, the quality of butter would improve while at the same time a number of men and horses at present occupied in this work would become available for agriculture,

and production would no longer be dependent on the importation of foreign labour.

The Ministry of Agriculture has organised some stations for the transport of milk to the dairies by means of motor vans. The drivers of these vans are paid by the State. The transport prices are 15 Latvian centimes per kilometre for the journey without load and 20 centimes for a load of 2.5 tons. A fund of 20,000 lats has been established to cover possible deficits. The stations have been organised chiefly in Zemgale so as to remedy the shortage of horses there. Up to the present, Renault machines are exclusively employed.

With a view to promoting the mechanisation of agriculture, the Latvian Peasant Credit Bank advances cash to farmers for the purchase of machines through the medium of agricultural organisations (dairy societies, societies for the joint utilisation of machines, etc.) and also to groups of at least three farmers, so as to facilitate the use of these loans by small holdings, savings banks, etc.

The Bank makes loans to agricultural organisations and to isolated farmers for the purchase of farm tractors at 5 per cent. repayable in 2 years, and for the purchase of other farm machines, threshers, mills, motor lorries, etc., at a rate of 6 per cent. interest. It grants credit alike to well established Riga firms and to provincial firms at 5 or 6 per cent., on condition that these firms which grant bills of exchange to farmers for the purchase of farm machines and implements charge an interest not exceeding the bank interest by more than one and a half per cent. The extent of the credit of each firm will be indicated by the Bank. Organisations and firms should require from the farmer at least 25 per cent. of the value of the goods as advance payment.

The State has done much for the mechanisation of agriculture, especially in connection with tractors. The Ministry of Agriculture hires tractors to farmers for a sum of 300 lats per annum, and also sells tractors at a very moderate price (1,832 lats, or the price of three horses). These are purchased by the Ministry from foreign firms, after a rigorous selection, as owing to low prices speculation is very easy. Up to the present only the large farms of Zemgale have received these tractors, as they can make the best use of them. Only Fordson tractors are here in question. The other tractors cost on the open market from 5,000 to 6,000 lats.

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(1) Previous list June 1936. To be continued December 1936.

(2) List of abbreviations: bihebd. (biweekly); bimens. (twice monthly); bimestr. (every two months); déc. (every ten days); étr. (foreign price); f. (copy); heb. (weekly); int. (home price); irr. (irregular); mens. (monthly); n° (number); N. S. (new series); p. a. (per annum); q. (daily); sem. (half yearly); s. (series); v. (volume); trim. (quarterly).

(3) Between brackets [I] are given translations and explanatory notes not appearing in the title of the review.

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NATIONAL STATISTICS ON FARMERS' INDEBTEDNESS: THE UNITED STATES CENSUS AND A NEW SWEDISH INQUIRY

(A contribution to the problem of comparable international statistics of agricultural indebtedness.)

SUMMARY. I. *Statistical Surveys of Farmers' Property.* Two different points of view. Data obtained by the "sample method" and by the census type of investigation. — II. *Methodological Principles for the Collection of Data.* Statistics of indebtedness in the United States Census of 1930. The narrow delimitation of the field of investigation. The Swedish survey of indebtedness in 1933. Extension of the field of investigation: kind of indebtedness and classes of debtors investigated. — III. *Utilisation and Presentation of the Data.* The relative importance of indebtedness. The "spread" or dispersion of indebtedness. Indebtedness according to the size of farms. Summary.

I. — STATISTICAL SURVEYS OF FARMERS' PROPERTY.

The United States Farm Census registers every five years the mortgage indebtedness of full owners of farm holdings. The last available data relate to the year 1929 (1). The Central Bureau of Statistics of the Kingdom of Sweden collected, for the first time, for the financial year 1933, the data relating to the indebtedness of *all* the Swedish farm holdings together with their assets and has just published the results of this inquiry (2).

Both these surveys are general surveys in a twofold sense. They relate to the indebtedness of all farm holdings (Sweden) or in any case to that of the most important category ("full owners" in the United States); in addition the range of the surveys is so far extended as to include not only the liabilities but also, and following the same method of return, the assets; the relative importance of the indebtedness may thereby be exactly and readily ascertained. The Swedish survey is to be considered as a special census of farmers' property and indebtedness alone, so that it contains only values expressed in national currency. The American survey has on the other hand the form of a general census, the object

(1) Fifteenth Census of the United States: 1930. Agriculture. General Statistics. Summary for the United States 1929 and 1930. (Reprinted from Vol. II, Agriculture. Gov. Print. Office, Washington, D. C., 1932.

(2) Jordbrukets Skuldsättning 1933. Statistiska Meddelanden. Stockholm, 1936.

of which is to assemble all the characteristic features for the farm and for the working of the farm; among these one set of figures relates the amount of the mortgage indebtedness and the value of the real property.

Consequently, although both these surveys are general surveys, the Swedish survey represents a special study of indebtedness, while in the American one indebtedness occurs among other features some of which may perhaps be considered of more importance. Comparing the two, it becomes possible to discern the advantages of the methods employed in either whether for the enquiry itself or for the tabulation of results, and in particular to resolve the question as to the minimum which should be required of such general surveys, if they are to be used as the basis of international comparative statistics of indebtedness. This is all the more important, as up to the present there is little general and uniform material available in this field of agricultural statistics.

The greater part of the data available at present on farm indebtedness has been obtained by the "sample method," by which, as distinguished from the procedure followed in taking a general census, relatively few farms are selected for enumeration; quite often, these inquiries are carried out with a completeness and precision scarcely possible in the conduct of general surveys. Typical enquiries of this kind are the annual reports of the Swiss Peasants' Secretariate which have been taken as a model by *Det Landøkonomiske Driftsbureau* in Copenhagen and by the *Allmänna Lantbrukssällskapet* of Sweden (1). All of these tabulate the accountancy results of a limited number of farms for the purpose of ascertaining their earning capacity and thus include also data relating to the indebtedness of the farm holdings. Among other investigations of this kind there may be noted the *Betriebsergebnisse der Deutschen Landwirtschaft* (2), published annually, which have been used by the German *Enquêteausschuss* in its comprehensive account of farmers' indebtedness and agricultural credit conditions in Germany (*Verschuldungs- und Kreditlage der deutschen Landwirtschaft seit der Währungsbevestigung bis Ende 1928*) (3). This semi-official enquiry goes somewhat beyond the sample method, in so far as it selects the farms in accordance with the special characteristics of the locality, the nature of the soil and the type of farming. In this way the farms reviewed form representative examples of certain types of farms and of certain local conditions peculiarly characteristic of German agriculture. On the other hand there is not to be found, either in this enquiry or in the investigations already mentioned, an exact indication of the general significance of the farms, groups, types and local conditions studied, that is to say, of their significance in relation to the agriculture of the country as a whole.

(1) Schweizerisches Bauernsekretariat: Untersuchungen über die Rentabilität der schweizerische Landwirtschaft, Brugg. Det landøkonomiske Driftsbureau: Undersøgelser over Landbrugets Driftsforhold København. Meddelande från Kgl. Lantbrukstyrelsen: Räkenskapsresultat från Svenska Jordbruk, Stockholm. See also: Undersökning av Lantushallningens Rantabilität i Finland. Helsinki.

(2) Deutscher Landwirtschaftsrat, Veröffentlichungen. Berlin.

(3) Ausschuss zur Untersuchung der Erzeugungs- und Absatzbedingungen der deutschen Wirtschaft.

II. Unterausschuss (Landwirtschaft), Bd. XII, Berlin 1929.

The most important objection that can be made to this kind of survey relates, consequently, to the selection of farms. In most cases the farmer's obligation or rather his willingness to reply to the questions addressed to him will depend on the fact of his being a member of the organisation making the enquiry. Membership of a farm accountancy association, for example, does not, however, depend upon whether the member's farm represents a fair average type from the statistical point of view, but on the desire of the farmer to conform to the model standard of accountancy the association is advocating as a means to further economy and thrift. Accordingly such farms alone come under investigation the working of which reaches a high level of scientific management and on which the results, as shown by the accountancy, tend as a rule to be above the average. It is none the less true that, by the sample or similar methods a large range of precise statistical data, especially on the working of farms, can be obtained which it would be hard to obtain otherwise. No such favourable results can be expected, however, if conclusions are to be drawn from the results of enquiries as to the general conditions of the agriculture of a country. Statistical knowledge of these conditions is commonly based upon average figures arrived at by inquiring into the soil-condition, acreage, production, live stock, etc. of *all* farms or, at any rate, of all farms within a certain district or category of farms (according to size, type of farming, etc.). The results of surveys by the sample method, however, do not fit in with this framework at all, since the sample does not contain in itself a criterion of its representative value for the farms taken as a whole, and indeed cannot contain it. For national systems of agriculture this disadvantage may sometimes be remedied by comparing the locality, the size and the type of the farms forming the sample with the corresponding data of the general statistics, thus determining in a roundabout way roughly their representative character. For an international comparison, however, this expedient cannot be employed, since the principle on which the selection is based in the various enquiries remains, statistically speaking, undefined. From a strictly methodical point of view there is consequently no possibility of rendering the very bases of sample surveys comparable to each other or of expressing any well grounded judgement as to their comparability. This is an inherent defect and therefore cannot be remedied by any general statistics of whatever nature brought in from outside.

This statement however is not intended to maintain that the results of surveys made on the sample method can *in no circumstances* be the subject of international comparisons; but we do maintain that the extent to which such comparisons can and should be made does not admit of exact proof, and that their results therefore will often be rejected on purely methodical grounds. Only in such cases, where a general correspondence occurs in respect both to the methods of enumeration employed and of the general farming structure of the different countries concerned, this criticism will not be justified. Thus we regard it as quite possible immediately to draw parallels between the results of the Swiss, Danish, Swedish and probably also the Finnish inquiries mentioned above, because, in the first place, these inquiries have been carried out by very similar methods and by very similar organisations, and, in the second place,

because these three or four countries are characterised by a prevalence of family farm holdings of the medium-sized category, and accordingly exhibit very marked resemblances in the general structure. But already the surveys made by the German *Landwirtschaftsrat* and the *Enquêteausschuss* could not have been brought into direct comparison with these other countries, except with certain reservations, allowing only certain districts and types of farms to be alluded to. On an international scale, however, such direct comparisons seem completely doomed to failure, since the methods of the enquiries as well as the structure of the agricultural regions concerned do not admit of a common denominator.

The case would be somewhat different, if in view of the solution of a well defined problem—as for instance that of indebtedness—a certain number of farms of a typical average character were selected and studied, it being understood that the institution making the enquiry should proceed on the basis of characteristics supplied by general statistics. Such investigations have been made in the United States, utilising the census results, but not, so far as we are aware, for indebtedness. Even, however, if there were available a larger number of such investigations for the agriculture of different countries, each of which might be regarded as thoroughly representative, there would still be serious methodological difficulties arising from the differences in the general statistics of each country and the way in which these had been used as determining the representative character of the selected farms in each case. These difficulties could be overcome only in the case of a world census of agriculture. For the materials at present existing and available, it holds good, therefore, that surveys made on the sample method are suitable bases for direct comparison only when there is a similarity in the structure of the national farming systems and when the enquiries have been based on similar principles; if the structure of the national agriculture greatly differs in the different cases, then conditions cannot, at least up to now, be compared in any satisfactory way.

The census of the United States and the Swedish survey are not open to these objections. As they cover all or in any case a large number of farms, the individual differences which exist between the separate farms cancel out in the results and only the general conditions are observable; the difficulty in regard to the representative value of the results is thus eliminated by the very fact of the range of such surveys. Furthermore, it will also seem unnecessary to bring in other statistical material for the purpose of interpreting its results for the following reason: The significance of indebtedness (whether for the farm or the national economy) can be shown only by relating the amount of debts to the value of assets. Every general survey assumes therefore the character of a census, including all or at least the most important items of farm property. In this way, it supplies *in itself* the data necessary for establishing size classes of holdings or types of farming into which the figures of indebtedness may readily be inserted. Thus, according to its basis and statistical tendency, every general inquiry into farm indebtedness represents a statistical unit, which within the limits of the region to which it is applicable supplies unequivocal results. These enquiries do not differ from each other by the greater or less representative value of their original material and of their results, but only by the methods

followed in making the survey and in compiling the results in each case. The inherent and main difficulty of the international comparison is, in method and principle, the same as that which has to be taken into account in all international comparisons of statistics of population, production, trade and prices.

In a certain degree the differences, and correspondingly the difficulties, of the comparability between national enquiries into indebtedness are less than in the cases just mentioned. Indebtedness assumes in all civilised States a definite legal form which finds its expression either in well defined security constituted in favour of the creditor (mortgage, pledge, bill of exchange), or in equally well defined rights of recourse against the debtor (personal debts, personal security). However great the national differences in regard to juridical consequences arising out of the creditor's vested rights may be, the sum due is everywhere established in an unequivocal manner, and the most important basis is thereby secured for the statistical enquiry. For all cases of real security this also holds good for the corresponding items of the property so that at least the most important items on both sides of the balance sheet are numerically fixed. This is especially important in the case of mortgage indebtedness which constitutes by far the larger part of farm debts. Since the mortgage is on the land of the farm, the value of this must be estimated as exactly as possible at the time of the contraction of the debt. Mortgage credit banks and insurance companies, most of which are obliged by law to keep their loans within a certain percentage of the real estate value of the farm, have set up quite elaborate methods for the ascertainment of land and farm values. Hence for our purposes there is no need to raise the somewhat troublesome question whether by value of the farmland and type of debt the same thing is to be understood in the case of two separate enquiries. This question may be answered in the affirmative, as we are not concerned here with the problem of correct definitions, but only with the question whether and how far the data supplied by the farmers are analogous and are in all cases exact.

Thus the first important difference between the Swedish and the American statistics of indebtedness that has to be studied is that of the *range* of debts and of property values on which information has been required; the assumption is that "mortgage," "land value," "farm stock," etc., refer in the two cases to the same objects. The enquiry may be confined therefore to the questions how far the two surveys cover all types of debts and all the property values and what are the consequences that follow from any limitations that may be imposed on the field of the survey.

II. — METHODOLOGICAL PRINCIPLES FOR THE COLLECTION OF DATA.

A. — *Statistics of Indebtedness in the United States Census of 1930.*

The United States Census deals only with a single type of farmers' indebtedness, namely the mortgage. Its importance for agriculture as a whole, or rather for the part thus indebted, is set forth, in the first place, from the general

point of view of the *frequency* of mortgage indebtedness. The relevant question in the enquiry schedule was worded as follows: "If you own all or part of this farm, was there any mortgage debt on the land and buildings so owned on April 1, 1930?" Thus, the category of farmers from whom an answer was expected was limited to those who either owned all the farm land worked by them or else farmed some rented land in addition to their own. To this category of "owners" (as it is styled throughout the Census) there belonged about 56 per cent. of all farms and of arable land. It was for this class only that the fact—but not the amount—of mortgage indebtedness was established. In consequence, there appeared under the headings "Free from mortgage," "Mortgaged" and "No mortgage report" in each case only the number of "owned" farms for every administrative or geographical unit and finally for the Union as a whole. The more special question as to the *amount* of the mortgage debts was addressed only to the "full owners" farming their own land, *i. e.*, only to those who worked no rented land in addition. These in 1930 included about 46 per cent. of all farms and about 43 per cent. of all farmed land. For tabulation purposes the records were again classified into those showing no mortgage report or being free from mortgage or finally stating the amount of the mortgage debt. It is to this latter group only, comprising about 60 per cent. of the full owners and representing some 18 per cent. of all farms, that the Census for 1930 gives fuller particulars as to their indebtedness; for this group alone is shown the amount of mortgage debts, the area of the farms and their value (land and buildings), and for this group only relative figures indicating the significance of the debt burden are given, *viz.*, the ratio of mortgages to the value of the farm land (including buildings), the amount of debt per indebted farm and per acre of farm land. These data are set out for the usual administrative and geographical subdivisions, but are not classified according to the size of the indebted farms nor with regard to their type of production.

It may be a matter of surprise to find that the American Census covers in its section on farmers' indebtedness 18 per cent. only of all farms, although the primary material was established in the course of a nation-wide enumeration covering all farm enterprise. But no restriction whatsoever was made in regard to the scope of the enumeration; if its results in respect to farmers' indebtedness do cover only about one fifth of the farms, this is solely due to the extremely rigid conception of mortgage indebtedness as the sole object of the enquiry into debts. From this strict definition there follows first the elimination of all farms not burdened with debts within the group of full owners, such proportion being about 40 per cent. of the whole group. This procedure is in itself entirely justified, but it does not bring out with sufficient clearness the structure of the indebtedness of agriculture *as a whole*, since this can only be recognised and judged on the basis of the relation between *total* debts and *total* assets (or total farm values). We shall have to return to this point in another connection, when dealing with the question of scientific tabulation and utilisation of the material collected.

In regard to the principle adopted for the survey, another objection may be urged here, namely, that the mortgage indebtedness thus established cannot and does not represent the *whole* of such indebtedness, since mortgages on rented lands,

as well as on all farms that include some rented lands, have escaped being recorded in the survey. It would seem there is here to be found an over-rigorous application of the two fundamental principles of the American Census which are: to have the farm operator alone fill up the enquiry schedule, and further to exclude all questions relating to conditions arising out of the fact of any external ownership claim or right exercised over the farm thus worked.

The result is, firstly, that the census does not supply any information of the mortgages on farms consisting exclusively of rented lands, nor on mortgages on those worked by managers, since the *operators* of these farms could not be compelled to declare a mortgage which they had not themselves contracted. But why could not the *lessor* be called upon to state the amount of mortgages contracted on farm lands leased by him to others? Undoubtedly, considerable difficulty would have been encountered in securing these data in so far as absentee owners were concerned. But it might well be asked why the parcelled-out estates of the Southern States have been neglected also: quite frequently the owner still farms a part of the former plantation and or passes over to his "croppers" the live stock necessary for the farming of the leased portions. Being himself actively engaged in farming he might very well be required to declare the mortgage indebtedness on all land belonging to him, and the more so, as the census of 1930 otherwise furnishes a very informative survey of the somewhat complicated conditions of tenancy prevailing in the South.

It is, secondly, equally difficult to understand why there has been no attempt to establish for part owners the mortgage debts contracted by them on those portions of their farms which actually belong to them. It might be objected that for the sake of completeness it would then be necessary to register also the mortgage on that land which is rented in addition, and since this information could be required only by the lessor there would be always *two* replies on the mortgage indebtedness for every farm belonging to a part owner; this would render more difficult both the survey and the utilisation of the data obtained, the more so as the land value would have also to be returned twice. The actual circumstances are however as follows: filling out the census questionnaire, a farmer who has rented out some part of his land to his neighbour (and apart from the South this is by far the most frequent case) will very seldom feel obliged to cut down the amount of this actual mortgage by a slice corresponding to the value of the land he has leased, even when this should happen to be included in the mortgage. We are rather of the opinion that the full owner, with very few exceptions, always declares the total amount of the mortgage debt he has contracted without considering if he has leased some part of his land. Consequently, the total indebtedness of all "owned" farms would be arrived at within narrow limits of error by simply adding together the mortgages recorded by the full owners and those recorded by the part owners, leaving out of account only the indebtedness of farms either rented off in full or worked by a manager. This argument holding true, it still might be objected that, for calculation of farm land values, a double series of data would be necessary. But this objection is met by the fact that the census of 1930 has positively established the farm values for *all* "owner" farms, including those of part owners. This fact justifies once more the question asked above: why

have the part owners had to declare the value of their farms, but not the amount of their mortgages?

In any case it is reasonable to expect of a census of model type, as is the American, that it should include as complete a return as possible of mortgage indebtedness and that it should not abandon the comprehensive character, so marked in every other respect, in favour of a principle of enquiry too rigidly applied (1).

While the circle of persons under the obligation of declaring their farm indebtedness is thus defined and limited by the rigorous interpretation of the relationships constituted by the mortgage itself, there is a corresponding limitation in respect of the assets. For the statistics of indebtedness the farm land values (including buildings) were required only in the case of full owners who had contracted mortgages, since they alone had any indebtedness to record. No attempt was thus made to deal with the value of farm stocks, nor with land values in the case of part owners and full owners who had no mortgage indebtedness. It is true that at another point in the census the land values and the values of farm stocks are given in full, but unfortunately it is impossible to compare these data with the mortgage indebtedness, since instead of these values having been given separately for the group of full owners alone, they have been given in block with those of the part owners. In consequence it is not possible to determine the importance of the mortgage indebtedness for the *entire group* of full owners, but only for those whose farms are burdened with mortgages.

It may be noted from here onwards that thus the data of the American census establishing the significance of the mortgage debt (*i.e.*, in its relations to farmland value) cannot be compared with the corresponding figures of the Swedish survey, since these latter are based on the land values for *all* fully owned farms. As will be explained later, the procedure followed in the Swedish survey is to be preferred in so far as the American census seems in this respect to rest on too narrow a basis.

B. — *The Swedish Survey of Indebtedness in 1933.*

The Swedish statistics of indebtedness are on a much wider basis than the American ones. The Bureau of Statistics required *all* persons deriving any sort of income from owning or cultivating land to make a full declaration of their assets and their debts, including not only debts on the farm but also the personal liabilities of the farmer or owner. The conceptions of assets and of debts were

(1) It is felt that this criticism is not merely justified but one which needs to be made since the limited basis of the American survey renders unnecessarily difficult the comparison of the mortgage indebtedness of the United States with that of other countries (*e.g.*, Sweden). This restriction would seem moreover to be the expression of uncertainty on the part of the Census Bureau itself as to the correct method of the same 1930 census. In proof of this reference may be made to the corresponding question in the 1925 Census, which differed noticeably from that of the 1930 census. In 1925 every owner of cultivated land was required to state the amount of the mortgage on this land, equally whether he worked the land himself or rented it to tenants, either in whole or in part. It would be of interest to know why the Census Bureau abandoned this fuller form of drafting the question in favour of the form dealt with in the text.

consequently applied in the widest possible sense. For the tabular classification of the data obtained the amounts relating to the farms themselves were shown separately from the total amounts. The *debts* were thus classified as follows:

1. Total amount of debts contracted by the farmer or owner. In this is included:

2. Total amount of debts contracted for the farm itself and for its working. These are divided into:

- (a) Mortgages without additional guarantee;
- (b) Mortgages with additional guarantee (usually personal surety);
- (c) Liabilities against personal surety;
- (d) Loans on chattel pledge;
- (e) Debts against bills of exchange;
- (f) Other borrowings and debts.

Only those indicated here under 2 (a) and 2 (b) are shown in the American Census.

As the survey of indebtedness extended to all holders and owners of farms, these had to be placed in clearly distinguished groups for purposes of the summary. As criterion of differentiation the form of land tenure was adopted. The scheme for debt classification was thus made to correspond to the following five groups of persons:

1. Owners renting out all of their land (absentee owners). These can only declare any mortgage there may be on their land. In the American census this group was not represented.

2. Farmers in full ownership of the farms cultivated by them. This group, the most important of all, declares all types of debt. In the American census the corresponding group is that of full owners but these are there required only to declare mortgage indebtedness.

3. Tenants and managers who own no part of the land they cultivate. Naturally these cannot declare mortgages, but only other types of debts. This group does not appear at all in the American debt survey.

4. Farmers who rent, as tenants, less than half the land they cultivate.

5. Farmers who rent more than half of the land they cultivate.

These two latter groups declare, in both cases, all types of debts, but mortgage indebtedness only in so far as burdening the land they actually own. The American census combines these two groups in one as part owners, and requires from them only the declaration of the *fact* and not of the *amount* of the mortgages, and no declaration of other debts.

The farms forming part of each of these five categories are again grouped by size, *i. e.*, according to their *value* (land and buildings) The very basis for this classification is found in the primary material of the survey itself, since the farmer had been asked to give a full account of his assets, among which the real estate value forms naturally the most important item. Indeed, he was also asked to give the acreage of his farm, but these figures have not been used for classification purposes, the aim being not only to have the data themselves recorded in terms of value alone, but also to build up the statistical categories used for their tabulation and presentation on the same ground.

Owing to its wide basis and the marked differentiation shown in the grouping, the Swedish survey not only represents a valuable contribution to Swedish agricultural statistics but it also lends itself to the concrete analysis of general problems of farm management (1). From this point of view it may even be said that it approaches the ideal of a statistical survey. It is however precisely because of these qualities that it cannot be recommended for imitation in a general way. So detailed an interrogation of the farmers is possible only in countries which are relatively small and inhabited by a rural population of high intellectual level. Also, it is probable that few States have sufficient funds at their disposal for so closely differentiated an elaboration of the material, or are inclined to undertake it; even in Sweden for the same reason a repetition of the survey is not to be contemplated in the near future. On the other hand, it fulfils the requirements from the standpoint of international comparability in a much higher degree than does the American census. If it were feasible to simplify the methods of the Swedish enquiry, without altering its fundamental character, it would be possible to define more exactly the requirements essential to the attainment of the ideal of international comparability.

This can easily be done. The extent of the limitations imposed on the attainment of such an end relate to:

I. — The scope or range of the survey of the *types of debts*.

(a) The question of the total indebtedness. In our opinion this may be disregarded, since it belongs by its very nature rather to a general census than to a special agricultural one.

(b) The division of mortgage debts into those with and those without additional surety. The introduction of this distinction into the Swedish survey is explained by conditions peculiar to Sweden where a special importance attaches to the additional personal guarantee.

(c) The detailed sub-division of debts not secured by mortgage. This appears unnecessary, as even a still more detailed subdivision than the Swedish would not allow of a complete classification of all these debts.

A more general consideration follows from the above as to the "correct" classification of debts. As criterion of distinction, all these surveys make use of the *legal form* of the debts (mortgage, personal debt, bill of exchange, debt on the security of a pledge, etc.). If this criterion were consistently applied, it would involve the enumeration on the enquiry schedule of nearly all the possible forms of borrowing and of credit. Since this is in practice impossible, there remains only to subdivide the debts into the two main groups of debts secured by mortgages and others not so secured. This solution is however far from satisfactory, since among the debts not secured by mortgages are those which, from their place in the farm economy do still form part of the liabilities secured by the value of the farm.

(1) It is thus that the writer of this article has endeavoured, on the basis of this material, to arrive at an exact statistical representation of the relations existing between the type of farm, and the structure of the indebtedness and the assets. He believes that he has arrived at results which in their interest pass beyond the local and national limits of the material used, because the Swedish statistics of indebtedness refer to the structure of a typical peasant farming country.

Such are especially the debts which, following on a change of ownership, have not been registered as mortgages because of the ties of near relationship existing between the creditors and the farmer who is their debtor; the case is usually one of the settlement of an inheritance between brothers and sisters, but may also arise in connection with the transfer of a farm to a son in the lifetime of the parents, which is often effected by verbal agreement or by a simple acknowledgement of debt. From the standpoint of the farm these debts have nothing in common with the other types of non-mortgage liabilities; these latter arise out of the ordinary requirements of the farm, while the former are connected with the condition of ownership in the soil; the two are brought into the same category merely because of the legal and negative characteristic, *viz.*, that the debts of neither type are secured by mortgage. From the standpoint of the farm, all debts arising from change of ownership whether or not secured by mortgage, should be brought under a single heading. As second group there would be found all debts incurred for long term investments in the farm, such as improvements, buildings, enclosures, etc. The third category would then include credit for current farming operations without taking account of the different forms of this. Such a classification would adopt as criterion, in place of legal forms, the object or purpose for which the debts were contracted and might thus better fulfil the requirements of *economic* statistics. Unfortunately it is not possible to base a survey of indebtedness on such a formula, because the debts of the first and of the second group are at present so generally secured by mortgages that, in the majority of cases, it is no longer possible to distinguish them according to their purpose: owing to the instrument of security constituted by the mortgage, debts arising out of a change of ownership and long term borrowing for productive purposes have become one and the same thing, especially for the owner who farms his own land (1). Hence all that is possible practically is to consider mortgages as representing both classes of debt, but then this indebtedness has to be supplemented by debts arising out of change of ownership but not secured by a mortgage, that is to say, in the enquiry schedule an additional question must be included in reference to this kind of debt (2). All the other debts may then, with a high degree of probability, be considered as true farming credits arising from the current farming requirements.

The form of the survey would then be as follows:

1. Debts secured by mortgages.
2. Long term obligations resulting from change in ownership in so far as these are not already included in the mortgage liabilities.
3. All other debts, whatever their legal form.

(1) In illustration of this fact, reference may be made to the procedure of many Danish family farmers; on assuming ownership of the farm they take out the highest possible mortgage on the land, pay out their brothers and sisters, or the former owners, in full, and put the remainder into their strong box or into the savings bank.

(2) This is precisely what was done by the Swedish Central Bureau in consequence of the surprisingly large total under the heading "Other debts and borrowings," a supplementary enquiry form being addressed to the farmers who had filled up the previous schedule. It may be of interest to learn that in this way it was possible to establish that about one sixth of the debts not secured by a mortgage were debts contracted in consequence of a change in ownership.

The sum total of these debts represent the farm indebtedness; groups 1 and 2 both belong to the type of "real" liabilities or those secured on the land, from which there is to be sharply distinguished the group of credits for current farming operations.

II. — In addition to limiting the range of debts enquired into, it is possible to narrow the circle of persons interrogated even more than is done in the Swedish enquiry, while maintaining the principle of classification according to the system of tenure of the soil. The limitations practicable in this respect relate to:

(a) The group of owners who do not cultivate any part of the land they own. This group might, in our opinion, be completely omitted; instead tenants and managers should be required to ascertain from their lessors the total of the mortgages on the cultivated lands rented by themselves.

(b) The distinction of the tenants who rent less than half of the area they farm from those who rent more. The two groups might be combined into a single group which would correspond exactly to the class of part owners in the American Census.

In this way the basis of the enquiry would be limited to three types—instead of five—of persons, without losing any of its actual scope; these three groups would correspond with those of the American Census (though not precisely with the grouping in its section dealing with indebtedness). These groups are:

1. Owners of the whole of the farm cultivated by them, corresponding to the full owners of the American census.
2. Owners who have rented additional lands (part owners).
3. Tenants and managers.

In consequence of the close connection which holds between the types of debts on the one side and the kinds of property or assets on the other a wider range of types is allowed for recording the assets in the Swedish survey than in the American. The Swedish classification is as follows:

1. The total assets of the cultivator or the owner, corresponding to the total of his debts. In the American census this item finds no place.
2. The land value, including the buildings, which should be assimilated to the "Value of Farms (Land and Buildings)" in the American Census.
3. The value of the dead farm stock; in the United States Census (*i. e.*, in the general census and not in the indebtedness enquiry in which this item does not appear) "Value of Farm Implements and Machinery."
4. The value of the live stock; in the United States Census: "Domestic Animals, Chickens and Bees."
5. Stocks and stores of cereals, forage, etc. This item does appear in the United States Census.

Since the types of debts and the classes of assets tend to correspond to each other, the objections raised above as to the range of the enquiry into debts hold equally good in respect of the enquiry into assets. In consequence the enquiry as to total assets may be regarded as superfluous. In the same way, it does not seem to be necessary to require information on warehoused

stocks, unless a separate return of the credits made on guarantee of these stocks is asked for. A survey of indebtedness may, in our opinion, very well be confined, on the one hand, to the real estate (including buildings) values, and on the other to the farm stock, distinguishing live from dead stock. In the real estate value there should however be a separate indication of the value of the land not utilised for farming purposes; but probably it would not be practicable to establish a limit sufficiently strict except in the case of land covered with forest. This is undoubtedly important for the further reason that, in the majority of countries, lending operations secured by a forest or by forest lands are effected under forms of credit which differ from those followed in the case of arable land.

We should thus arrive at the following plan of the survey in respect of the capital and indebtedness structure of farming:

<i>Assets.</i>	<i>Liabilities.</i>
1. Real estate value (including buildings) so far as possible exclusive of forest land.	1. Debts on real estate property including: (a) mortgage liabilities; (b) liabilities due to change of ownership not secured by mortgages.
2. Value of the live and dead stock.	2. Credits for current farming operations without special distinction.

These data would be shown separately on the tables for the following three groups: 1. Full owners; 2. Part owners; 3. Tenants and managers.

This scheme for the returns and classification of the original data of a survey of indebtedness appears to satisfy the requirements of economic statistics and at the same time could be carried out in practice without any special difficulties. It would be applicable to the most important elements of farm indebtedness and would furnish a suitable basis for international comparisons.

III. — UTILISATION AND PRESENTATION OF THE DATA.

A. — *The Relative Importance of Indebtedness.*

Every general enquiry into indebtedness has a tendency to become a more or less comprehensive census of property. As previously noted, it is only in this way that it is possible to take account of the relative weight of the indebtedness and of its importance as factor in the farming situation. As a measure of this relation there is everywhere employed the amount of the assets to which the sums owed are referred. For the American census and for the Swedish survey the differing scope of the enquiry gives rise to the following differences in the calculation of the percentages of indebtedness (the sum of the debts divided by the value of the assets):

The American census relates the total of the mortgages to the farm values (land and buildings) of the mortgaged farms, alone.

The Swedish enquiry relates:

- (a) the total sum of all the debts to the total sum of the assets of all farms (percentages of *total* indebtedness);
- (b) the farm debts to the sum of the farm assets of all farms (percentages of *farm* indebtedness);
- (c) the mortgages to the sum of the values, of land and buildings of all the farms (percentages of *mortgage* indebtedness).

From the criticism made above as regards the scope of the Swedish enquiry it would appear that the calculation of the percentage of total indebtedness indicated under (a) has little to recommend it. Furthermore the Swedish survey seems to make better use of the data, and with more consistency from the statistical standpoint, than the American census, regarding the determination of the percentages of farm indebtedness (b) and of mortgage indebtedness (c). Indeed, the American Census is under no obligation to calculate percentages of farm indebtedness, since no figures have been collected for the totals of farm debts. But even within the narrower limits of calculating the mortgage indebtedness, the Swedish method seems to us preferable, because it relates the mortgages—in contradistinction to the American method—to the values of *all* farms, thus including also those which are not indebted. From the standpoint of private economy, it is obvious that these debts should be related to the values of the indebted farms only. But if we are to compare different sets of averages each of which is intended to bear out the significance of indebtedness for a national or regional unit *as a whole*, then the basis of comparison should rather be a uniform one. This requirement is doubtless best met by taking into account *all* farms, *i. e.*, the total sums of mortgages as well as of farm values. The method followed by the American Census does not meet this requirement: an equally high percentage of indebtedness, for example, calculated on the basis of indebted farms alone, is far from representing *per se* an equally heavy debt-burden for the agriculture of two different regions, since it cannot be assumed that the values of the non-indebted farms constitute precisely the same part of all farm values in either case. In order to give a complete picture of the relative indebtedness, the average percentages of mortgage indebtedness must be amended by taking into account the farm values of non-indebted farms also, the simplest and most accurate way being to base the figuring upon the totals for all farms from the very outset of the tabulation.

The question, however, of how to handle properly the non-indebted farms within a statistical survey of indebtedness, remains still to be answered. The point of view of private economy can be neglected the less by the agricultural statistician, the greater the importance that is attached to the carrying out of farm management studies which are, as already mentioned, as much interested in the financial status of the non-indebted farms as in that of all others. For their sake, the figures relating to non-indebted farms should be given in full particulars. But also for the sake of studies, starting from the standpoint of national or world-wide economy, it is of decisive importance to ascertain not only the relative significance of indebtedness as a whole, but also to know how the indebtedness of a certain region or country is built up in the way of superimposed layers of

different debt-ratios, the lowest comprising all non-indebted farms, the highest all over 100 per cent. indebted ones and the rest lying between these two extremes. Every statistician is quite aware of the fact, that a percentage ratio arrived at by taking into account a large number of data, may either signify the bulk of the cases involved—the average representing then a comparatively “dense” value—or else may bear only a more or less “abstract” meaning in cases where the primary material includes a large number of extreme data counterbalancing each other in the figuring done. In other words, the average ratio indicating the relative weight of indebtedness for *all* farms together needs to be more closely determined, in respect of its “dense” or “abstract” value, before it can be taken as a real expression of the relative indebtedness of a group of farms. This determination is made most simply by a grouping of the farms included in the average according to their individual percentages of indebtedness, that is to say, by means of indicating the “spread” of these percentages round the average ratio referring to *all* farms.

B. — *The “Spread” or Dispersion of Indebtedness.*

The American Census does not contain data on the “spread” of indebtedness. By excluding the non-indebted farms one of the principal elements in such spread has been avoided and it was no doubt believed that by doing so it was possible to ignore the question of the spread or dispersion altogether. On the other hand, on the basis of the Swedish data comprehensive tables have been published, showing how the farms included in the calculation of a general average (1) were distributed according to their individual percentages of indebtedness. For the sake of a clear representation, all the possible debt-ratios have been drawn together into seven classes, *viz.*, non-indebted, indebted up to 10 per cent., between 10 and 25 per cent., between 25 and 50 per cent., between 50 and 75 per cent., between 75 and 100 per cent. of the assets; the seventh and last class consists of farms indebted by more than 100 per cent. Under these headings there appear the number of the farms the relative indebtedness of which lies within the limits indicated. The sum of the numbers entered under these headings naturally is equal to the total number of all the farms the debts and assets of which have been used for the calculation of the average ratio of their indebtedness. In this way the spread of the percentages of the total as well as of the farm indebtedness is calculated and represented; the mortgage indebtedness, however, is neglected. Nor are indications supplied as to the amounts of the debts and assets of those farms which belong to the separate classes established according to the percentages.

The following example will show how these spread-tables are used: in the principal farming districts of Sweden and in the smallest group of full owners working their own land (up to a land value of 5,000 crowns) about 26 per cent.

(1) The grouping of farms into size categories according to land values will be discussed below in greater detail, since the full significance of the computation of spread appears only within the framework of such a tabulation.

of the farms were not indebted and nearly 17 per cent. were indebted for more than 100 per cent. of their assets; in the group of large farms with land value of more than 50,000 crowns the corresponding figures were only 6 per cent. and 7 per cent. respectively of all the farms. The consequence of this wide spread in the case of the small farms was that their average percentage of indebtedness of about 53 per cent. characterised only 15 per cent. of all farms (these 15 per cent. showing debt-ratios of between 50 and 75 per cent.), while in the case of the large farms the slightly higher rate of 56 per cent. characterised nearly 30 per cent. of the farms. Consequently the very small difference in the average indebtedness percentages of the two groups concealed a very different *structure* of indebtedness in each case, which was only clearly seen when the spread was taken into account; actually the representative or intrinsic value of the average percentage of indebtedness of the large farms was twice that of the small farms (1).

As will readily be inferred from this example, the representative character of an average percentage of indebtedness will be judged by calculating how many farms out of all farms show a debt ratio similar to that indicating the debt-ratio of the total. (We use the term "similar," because the average debt ratio can be compared only to a *range* of individual debt ratios lying between certain limits, for example between 50 and 75 per cent. etc.). It is, however, not possible to assign to the farms grouped together according to their debt-ratios the corresponding sums of the debts and values themselves, the ratio of which forms the very basis of the grouping. In this way, the *weight* of these values in the calculation of the total average of indebtedness could have been established, giving thus an even better understanding of the qualitative structure of indebtedness. It is true that the Swedish statistics contain yet another set of "spreads" calculated on the basis of the values of *net* assets (*i. e.*, gross assets minus debts). In this case the assignment to the different groups is made according to the absolute values of the net assets, the grading of the groups corresponding to that of the size categories of the farms (see below); it is established equally for the cases of positive values of net assets (thus for all the farms with indebtedness less than 100 per cent.) and for negative values (thus for all farms indebted more than 100 per cent.).

Since the net assets have been calculated on the basis of *subtracting* the debts from the assets, the knowledge of their dispersion does not contribute directly to the further characterisation of the dispersion of indebtedness—being based on the *relation* (quotient) between debts and assets—, though the picture of the structure of the assets is thereby enriched by a feature of some interest. The same result, in our opinion, might have been attained more simply and more clearly by the expansion of the tables showing the spread of the percentages of

(1) For reasons which cannot here be discussed in detail these marked differences of spread — or, what comes to the same thing, of the representative character of the average percentages of indebtedness — are to be taken as typical. This seems all the more to justify the demand that in the elaboration of the data enquiry into details of the spread and clear presentation thereof should not be omitted.

indebtedness: the insertion into these of the actual amounts of the debts and assets would not only have more closely characterised the farms included in the different classes of indebtedness and their significance for the average debt-ratio of the group or class, but would also have rendered it possible to determine the net assets: the user of the statistics would have had merely the trouble of subtracting the debts from the assets. The present arrangement of the Swedish statistics seems to be not very clear, and utilisation is difficult as at the same time too much and too little is included. This holds also true in a certain measure for the tables showing the spreads themselves. The calculation of the percentages of *total* indebtedness has already been noted as superfluous, and accordingly the details of their spread is regarded as complicating unnecessarily the work of compilation. Generally speaking, the calculation of spread-tables for a *single* type of debts should satisfy the requirements of economic statistics. The *type* of indebtedness to be selected necessarily depends in each case on the scope of the survey; if this is limited, as in the United States, to mortgage indebtedness, tables of spread can be calculated of course only for this type. From the discussion in the first part of this article, however, it will readily be inferred that in our opinion the total of the *farming* debts forms the most suitable basis not only for the calculation of the percentages of indebtedness but also for that of their spread.

The question of the "right" method to follow in the calculation and presentation of dispersion is not an easy one to answer. In order to establish a standard deviation which would reduce the measure of the spread to a single numerical expression, percentages of indebtedness would have to be published for *all* farms. In a general statistical survey with its thousands of figures this is impossible, and moreover it would not even be expedient, since, for the economic interpretation, the relative level of indebtedness has in each case also a qualitatively different character, which completely disappears in the standard deviation which is the result of purely arithmetical operation. For evidence, it might be enough to recall the very different significance of the non-indebted farms and of those excessively indebted for the general debt situation of any particular farming area. We should, therefore, prefer the grouping by classes, or in other words, the *schematised* dispersion or spread, although from the standpoint of the statistical method it has the drawback that within the different classes or grades the percentages of indebtedness may be distributed with very little uniformity (for example, there may be a large accumulation either at the upper or at the lower limit of the grade). This might be remedied by establishing as many classes as possible, perhaps with a difference of 5 per cent. only, but this would greatly increase the labour required for the construction of the tables. On the other hand, a difference of 10 per cent. might satisfy even the strictest requirements while one of 25 per cent., such as is employed by the Swedish statistics (with the exception of the further subdivision of the first class) serves the purpose very well. The absolute minimum, the fulfilment of which must be emphatically required, consists in the indication of the non-indebted and the excessively indebted farms according to their number, the total amount of their debts and the value of their assets. This would at least bring into clear relief, as to their ab-

solute extent and as to their importance for the establishment of average percentages of indebtedness, the two extreme groups of indebted farms which have so much significance alike for private as for national economy.

C. — *Indebtedness according to the Size of Farms.*

For the representation of agricultural statistics secured in the course of a nation-wide enumeration, the administrative units of the country concerned furnish the most convenient and often also the only subdivisions used. This, so to speak, horizontal classification has come to be supplemented, and in an increasing degree, by a vertical one planned in accordance with the internal structure of the items which are the subject of the survey. As characteristic of this vertical grouping, the essential structural element of the subject matter of the enquiry is chosen, in agricultural statistics foremost the size of the farm, measured by the extent of the farm area. The use of size categories seems, however, to be nearly everywhere confined to the representation of data on the distribution of farm land and on the conditions of farm tenure. More rarely are production statistics and particulars of the farming system thus treated and for classifying farm assets and debts, the criterion of farm size has up to now been employed only by the Swedish survey in a comprehensive way (apart from enquiries of the sample type). The United States Census, to be sure, is giving the distribution of farm *values* according to the size of farms; the *debt* statistics, however, are shown on the basis of geographical subdivisions alone. Thus, it is impossible to deduce from the Census, or to calculate with its help, the differences in the mortgage indebtedness (that is, the ratio of debts to assets) for the different farm size classes, unless indeed the land values and the debts are looked upon as being distributed among the different size categories just as are the farm values or the areas farmed. This could only lead to results of any certainty on the assumption that the land value and the debt-ratio are nearly the same everywhere and in all classes. As this assumption seems still less admissible for the United States than it would be anywhere else, it becomes impossible to analyse the conditions of indebtedness of American agriculture in accordance with the size of farms.

Here also the Swedish survey utilises its data in a more complete and more systematic way. Indeed, the grouping of farms by their area is also abandoned, but only in order to replace this principle of division by one far more suitable for the purposes of statistics of indebtedness. For the establishment of the size categories of farms the Swedish survey starts from the farm *value* (and not from the area), grouping in its first class all farms with land, including buildings, of a value up to 5,000 crowns; the second, third, fourth and fifth groups including respectively farms with land of a value of 5,000 to 10,000 crowns, of 10,000 to 25,000 crowns, of 25,000 to 50,000 crowns and of 50,000 to 100,000 crowns, while the last group includes the largest farms with a land value of more than 100,000 crowns. This classification is employed in the tabulation and presentation of all the data appearing in the statistics of indebtedness; as already noted, it was for these same groups that the dispersion figures of the debt-ratios were calculated

also. As the single figure not being expressed in terms of value and not having been calculated by the help of such a value, the extent of the arable land of all farms within a certain value-class is given, and in so doing a grouping has been established according to land tenure (see Part I), *viz.*, land owned in full, rented in addition to owned land, or leased to other persons.

If it is agreed that the results of general agricultural surveys should be grouped by size categories of farms, the further requirement may well be admitted, namely that for the special case of statistics of assets and debts (and for these only) the criterion should be the land *value* rather than the area. In support of this opinion a special and a general reason may be given.

The special reason consists in the fact that the classification of farms according to their value affords the only reasonable framework for the representation of conditions of indebtedness. It has already been pointed out on several occasions that general statistics of indebtedness have a tendency to widen out into some kind of property census. This tendency entails, for the presentation of the results of the survey, the application of the economic category which is fully characteristic of the data in question and distinguishes them from other data of agricultural statistics: such a category is the value expressed in the national currency of each country.

The general justification of the classification according to value relates to the special position and function of indebtedness statistics in agricultural statistics as a whole. Any type of agricultural statistics, which groups its results according to size of farms, must of course proceed from the area farmed, but these may be shown either in units of area (thus in hectares, acres, dessiatines, etc.) or according to its value (thus in crowns, dollars, marks, etc.). Now, statistics of distribution of land ownership in particular are classified according to the extent of the area farmed. This is in accordance with the general idea which designates a farm as large when it includes much land, and when it does not, as small. By the same token, the statistics of land-utilisation, of the density of the live stock, of the employment of means of production of all kinds, and finally of agricultural production itself, may be more easily classified and brought into harmony with each other and the statistics of distribution of land-ownership, since it is by the extent of the area farmed that all these data are measured. None the less the grouping of farms according to their area has drawbacks, in view of the fact that the capacity of soil for agricultural utilisation greatly varies from district to district as well as between countries. In consequence, the more use is made of agricultural statistics for national and international comparisons the more detailed returns are required of land not in cultivation or without agricultural value (poor grazing and pasturelands, roads, built over parcels of land, etc.) and the less such land is taken into account when assigning farms to their size categories. Here the idea of "value" makes itself felt already in a general way. But it becomes more especially necessary to take it into account when the bases and results of farming activity have to be referred to the common denominator of all economic enterprise, *i. e.*, to money and value in money.

These considerations may be brought to a close by a general observation. For some long time past, the money analysis of farm management results has

been considered as an instrument indispensable for scientific investigations into agricultural conditions. All that is proposed here is the transfer of this point of view to the methods adopted for the elaboration and presentation of surveys dealing with the relations of agricultural assets to debts. Statistical surveys conducted on the sample method have already followed this procedure, but there has been some hesitation in adopting it for general surveys of the census type. A complete re-orientation of the whole of agricultural statistics so as to base them exclusively on value seems neither practicable nor advisable, while to present the statistics on a double basis under quantity and value would require such an expenditure of labour that other parts of the work of elaboration would perforce be neglected. For the more limited range of an enquiry into assets and indebtedness, however, the application of the principle of value is found to be in the closest harmony with the character the data assembled.

D. — *Summary.*

It will be seen that the following requirements for the elaboration and presentation of the data of a general survey of agricultural indebtedness may thus be formulated:

(1) For the calculation of debt-ratios (debts divided by assets) the whole of the farms under review, or rather of the data supplied by these, should always be utilised; if, for example, the non-indebted farms are left out the results are no longer comparable with those of other surveys, even if those too leave out of count the non-indebted farms.

(2) On the other hand full particulars must be given for at least the debt-free farms *and* for those that are excessively indebted; it would also be desirable to extend this principle to all the groups of indebtedness, *i. e.*, to establish a schematic representation of the spread of the debt-ratios.

(3) For the tabulation and representation of the data according to size categories of farms, the basis chosen should be not that of area but that of value of land, as it is only in this way that the survey retains its definite character.

It will be observed that in formulating these prerequisites, the requirements for the elaboration and presentation are both greater and stricter than for the scope of the enquiry and the comprehensiveness of the data themselves. This is fully recognised here. In our opinion, it is most essential to avoid wearying the farmer, or even arousing his suspicions, by too frequent and too detailed an interrogation. On the other hand it is felt that in the publications of central statistical authorities there is a tendency to pursue the methods of tabulation and presentation into the smallest details and thus to undertake unnecessarily burdensome calculations. The American Census and the Swedish survey alike offer many examples of this tendency, an outstanding one being the calculation of debt-ratios as well as of debt and farm values per farm and per unit of area even for the smallest administrative districts. It may be that such details are required by local interests, but for scientific work their utility is very doubtful, as the administrative unit can only very rarely be chosen as a basis of investigation that whenever several districts are studied together recourse must inevi-

tably be had to absolute figures. However valuable may be the calculation of relative figures for the whole of a territory as well as for the larger subdivisions, for the smaller units the statement of absolute figures would seem to be sufficient. The example here given, which might be supplemented by others of the same kind, shows that by reasonably contracting the scope of tabulation work, some labour could be released for fulfilling the requirements formulated above.

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INTERNATIONAL TRADE IN MEAT

SUMMARY. — International trade in live animals. — International trade in beef and veal, in mutton and lamb, and in pigmeat. — The European importing countries. — The United Kingdom the largest importer of meat. — The decline of international trade in meat in recent years. — Changes in the consumption of meat. — Fall in consumption due to general economic crisis, rather than to restriction of imports. — Increase of home production in importing countries. — Prospects in the international meat market.

For some time past the International Institute of Agriculture has been engaged in making a study of international trade in meat. A Report on the subject was presented in a provisional form to the General Assembly of the Institute held in Rome from 5 to 11 October; this report is now under revision and will shortly be published in its definite form. It will be the second volume of a series of studies on the principal agricultural products on the world market.

The study is confined to the three kinds of animals that are most important for the meat supply, *viz.*, cattle, pigs and sheep, and to the meat derived from them. The number of countries that are really important in the international meat trade is comparatively small, but the general survey of the international trade in live animals and in meat of the three kinds ranges over a considerable number of countries. By this method of treatment the outstanding importance of a small number of importing countries on the one hand and of a small number of exporting countries on the other hand is clearly demonstrated.

Apart from the general surveys, the report contains special sections on the movement and structure of the foreign trade of the principal importing countries in meat of each of the three different kinds. In the case of pigmeat, sections are included on the foreign trade of the United States and Denmark, in view of the fact that the export of pigs and pig products from these two countries has played and still plays a decisive part on the world market.

In addition to the chapters relating strictly to international trade, there is a chapter describing in some detail the production and consumption of meat in the principal importing countries, *viz.* the United Kingdom, Germany, Italy, France, Austria, and Czechoslovakia.

Throughout the Report the year 1924 has been taken as the point of departure and the information given relates in the main to the years 1924

to 1935. Comparisons are, however, drawn with the pre-war period, in order to show to what extent the same tendencies may be observed in recent years as in that period. The war-period and the years immediately following the war are, for the most part, excluded from consideration as being abnormal and not likely to furnish data that would aid an observer in forming an opinion on the development of the meat trade.

International trade in cattle, pigs and sheep is carried on to-day, except in small volume and apart from breeding stock, between neighbouring countries or countries not very far from one another. As far as pigs and sheep are concerned, this was already the case before the war; there were, on the other hand, still considerable consignments of cattle from Canada and the United States to the United Kingdom in the ten years immediately preceding the war, though already, even in this period, the trade showed a distinct tendency to decline.

Owing to the fact that the trade in live animals now takes place only across short distances there is not a single world market in which any producing country can compete, but several regional markets. The most important of these is the European market, but there are other independent markets in North America, South America, South Africa and parts of Asia.

International trade in beef and veal and in mutton and lamb is for the most part across long distances. The proportion of fresh meat entering into the total trade is consequently not a high one. The greater part of the beef and veal entering into international trade is either chilled or frozen; the greater part of the mutton and lamb is frozen. The trade in beef and veal and in mutton and lamb is to-day confined mainly to an exchange between countries of the Southern Hemisphere (Argentina, Uruguay, Brazil, Australia and New Zealand) and a small number of European countries, notably the United Kingdom.

The trade in pigmeat is mainly across comparatively short distances, though there is also a certain volume of trade between distant countries. The proportion of fresh meat is small, international trade being for the most part in prepared pigmeat, primarily bacon and hams. Except for small quantities the trade is confined to the Northern Hemisphere, and more precisely to the United States, Canada and the European countries.

The decisive part on the international meat market is played by the European importing countries, not only on account of the volume of their exports, but also because on the European markets several countries compete with one another. By far the largest importer of meat is the United Kingdom and its imports have increased since the war not only absolutely but relatively.

It is also a large importer of live animals (particularly cattle) but such imports have rather tended to decline. The share of the United Kingdom in the aggregate excess of imports of all importing countries (with a few insignificant omissions) was as follows:

Years	Beef and veal	Pigmeat	Mutton and lamb	Cattle	Pigs	Sheep
1924	63.3	73.7	95.0	52.8	16.3	21.7
1929	67.9	83.6	93.5	31.6	13.5	16.2
1934	84.3	92.0	96.7	46.7	14.4	10.7

In view of the position of the United Kingdom the importance of the regulation of the imports of meat into that country from 1932 onwards will readily be understood. On this subject precise information will be found in the Report under notice (1). Full information is also given on government measures for the encouragement of meat production and the regulation of the meat market in the other countries that are large importers of meat.

A fact that is clearly brought out by the general survey of international trade in meat is that the trade has considerably declined in recent years. The fact is also apparent from the many statistical tables given in the text and in the Appendices. We here reproduce a summary table showing the excess of imports in the years 1924 to 1934 of the importing countries.

Excess of Imports of the Importing Countries.

Years	Beef and veal (thousands of quintals)	Pigmeat (thousands of quintals)	Mutton and lamb (thousands of quintals)	Cattle (thousands of head)	Pigs (thousands of head)	Sheep (thousands of head)
1924	11,159	7,004	2,756	1,929	1,419	2,657
1925	11,732	6,568	2,960	1,798	1,712	2,999
1926	11,022	5,928	2,954	1,768	1,992	3,887
1927	10,855	6,232	3,069	2,036	2,291	3,391
1928	9,442	6,251	3,069	2,306	2,419	3,462
1929	8,936	5,962	3,119	2,446	2,279	3,457
1930	8,863	6,408	3,547	2,176	2,225	4,750
1931	8,509	7,486	3,921	1,489	2,000	3,819
1932	7,339	7,410	3,741	1,263	1,320	3,359
1933	7,299	6,293	3,603	1,237	1,009	3,172
1934	7,528	5,480	3,505	1,191	908	3,397

The observation that the international trade in meat has declined leads at once to the inquiry whether the decrease of the imports into the importing countries has been compensated by an increase in home production or has brought about a restriction of consumption. It is to answer this question that a series of studies has been made of the production and consumption of meat in the principal importing countries. In the sections embodying the results of these studies the changes not only in the consumption of meat but in the relative proportion of home and foreign supplies are set out as fully as the available information allows this to be done.

The tables given in the Report to show the changes in the consumption of meat are drawn from a documentation prepared by the International Institute of Agriculture and presented to the Mixed Committee of the League of Nations on the Problem of Nutrition (2). We here reproduce one of these tables.

(1) The information in the Report is carried up to the end of 1935. More detailed, but not so recent, information may be found in earlier publications of the International Institute of Agriculture. See the volumes for 1932-33, 1933-34 and 1934-35 of "The Agricultural Situation," and the numbers for October and November 1935 of the *Monthly Bulletin of Agricultural Economics and Sociology*.

(2) League of Nations: The Problem of Nutrition. Vol. IV: Statistics of Production, Consumption and Prices. Geneva, 1936.

Consumption of Beef and Veal, Pigmeat and Mutton and Lamb
(in Kilogrammes per Head).

Country	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934
Belgium	38	38	38	38	38	40	42	40	41	41
Czechoslovakia	33	34	34	36	35	35	35	33	31	34
Denmark (1)	49	—	—	42	42	47	47	57	66	66
France	—	—	33	35	34	33	34	34	35	34
Germany	47	45	49	52	51	50	49	48	49	54
Italy	—	19	20	20	20	16	17	16	16	15
Netherlands	40	38	39	39	37	37	41	42	45	—
Norway	28	31	32	32	32	32	33	33	32	35
Poland	—	—	17	19	19	18	20	19	20	19
Switzerland (2)	46	44	—	44	44	44	47	48	48	50
United Kingdom	62	61	63	64	62	62	65	65	63	63
Canada	67	68	70	69	69	66	67	67	62	64
United States	62	61	63	63	62	60	61	62	64	63
Australia	111	105	112	111	97	91	85	86	98	97
New Zealand	113	117	105	105	106	96	127	105	98	111

(1) FABER's estimate 1922 (Journal of the Royal Statistical Society, January 1934); includes offal. — (2) 1921.

While the absolute figures are not strictly comparable, owing to differences in the methods of calculating or estimating the consumption, the table shows—and the fact is also shown by the separate tables for the consumption of beef and veal, of mutton and lamb, and of pigmeat—that the tightening of the measures of restriction has not led to a decline of consumption in all the countries. Thus in France, Belgium and Switzerland the consumption of meat has increased rather than diminished. On the other hand, in Australia and New Zealand, which are exporting countries, a considerable decrease in the consumption of meat may be observed, and in Canada, another exporting country, there has been a small decrease which, nevertheless, exceeded the decline in the consumption of the importing countries, Germany and Czechoslovakia. It is true, however, that Italy shows a particularly pronounced decline in the consumption of meat.

It would seem, from the figures, that the fall in consumption that has been observed in certain years in several countries that have imposed severe restrictions on imports has been a result of the general economic crisis and that, in consequence, after a certain economic revival noted in these last years it has again been replaced by an increase. Consequently the restrictive measures have only a secondary importance. It is precisely because the consumption has fallen in importing countries such as Germany and Czechoslovakia that imports have been more and more rejected. In these countries the restrictions on the import of meat only represented a link in the chain of agricultural protectionism as a whole, without which the consumption of food-stuffs would have probably fallen even more markedly since, had there been no restrictions on imports, the difficulties of agriculture would have been greater and the consumption capacity of other large sections of the population would have been even more severely depressed.

A much more important factor in the development of the international meat trade than the fall in consumption has been the increase of home pro-

duction in the importing countries themselves. The case of the United Kingdom is of special interest. Taking all kinds of meat together the home supplies have increased since 1924 and in 1934 were 18.2 per cent. higher than in the earlier year. Total imports reached a maximum in 1931, but have since considerably declined; the decline affected imports from both British and foreign countries, but was much more marked in the case of foreign countries. Expressed as percentages of total supplies of meat, the home supplies rose from 41.42 per cent. in 1924 to 46.97 per cent. in 1934, and the supplies from British countries rose from 17.41 per cent. to 19.98 per cent., while the supplies from foreign countries fell from 41.17 per cent. to 33.05 per cent. In Germany the increase in home production and the decline in imports were much more marked than in the United Kingdom. The national production of all kinds of meat rose from 25,232,000 quintals in 1925 to 34,160,000 quintals in 1935, while in the same period the excess of imports fell from 2,795,000 quintals to 787,000 quintals. Thus the national production, expressed as a percentage of total consumption, rose from 90 per cent. in 1925 to 98 per cent. in 1925. Home production in France varies considerably from year to year and, as a consequence, foreign trade fluctuates widely; the foreign supplies, expressed as a percentage of total consumption, were 10.8 per cent. in 1927, 1.8 per cent. in 1929, 17.4 per cent. in 1931 and 2.5 per cent. in 1935.

The study concludes with the following estimate of prospects in the international meat market: "The decline in the volume of international trade in live animals and meat has been, in part, the consequence of a restriction of consumption due to the crisis, and where the crisis has not reduced the consumption it has certainly, in many cases, prevented an increase in consumption. The good harvests of forage crops from 1929 to 1933, combined with the low prices of fodder had, moreover, accelerated the increase of production in various countries, and this also reduced the import requirements. But in the countries in question, the bad harvests of forage crops in 1934 and 1935 and a simultaneous economic revival in 1935 had the effect of bringing about a renewed increase of imports. If unemployment continued to decrease and the purchasing power of large masses of the population increased, the import requirements of several countries might grow still further. For, according to all the studies relating to the question, the meat consumption of large sections of the population of the meat-importing countries still remains well below the quantity that would be desirable from the physiological point of view. Even a small increase of the average consumption per head of the population would render it necessary that large supplies should become available.

"However, in view of the present difficulties of international trade and of payments, it would be possible only to a certain extent to bring about a revival of the international meat market by an increase in consumption. It is precisely on account of these last difficulties that, in spite of an increase in requirements that has already taken place and has even given rise to more or less appreciable tension in the meat supply, several countries (Germany, Italy, Greece) have during recent years, only allowed their imports to increase within certain limits, and have endeavoured by various means to adapt the

consumption to the available supplies. The longer the present difficulties in connection with international exchanges and the measures of restriction continue, the smaller the chances of a marked revival in international trade in meat become. Even now it is difficult to believe that the policy of agricultural production, clearly defined and energetically pursued that is found without exception in all the principal importing countries can be fundamentally changed. The aspiration to greater independence in the meat supply, an aspiration occasioned by a great variety of motives (safeguarding the profitability of agriculture, maintaining the purchasing power of large sections of the population, exchange difficulties, creation of possibilities of employment) has, in any case, given birth to great capacities for production, which now could hardly be destroyed, but will probably be developed more and more. But the intensity of this aspiration and the degree to which it will be felt depend, eventually, on the form which international economic relations will take more than on the technical possibilities of production and considerations of profitability.

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The Report on "Workers' Nutrition and Social Policy" published by the International Labour Office contains the results of an extensive investigation of the problem in compliance with a resolution submitted to and approved by the International Labour Conference of 1935. The investigation was carried on in collaboration with the Health and Economic Sections of the League of Nations and with the International Institute of Agriculture. The report is contained in eight chapters and its contents are further illustrated in six appendices dealing with some particular aspects of the general problem of nutrition. Chapter I, "Nature and Scope of the Report," deals with the broad questions of malnutrition, malnourishment and under-nourishment, each of which classifications is clearly defined and examined in its relations to generally accepted nutrition standards (the London Standards), to what workers actually eat, to economic and social problems and to the means of improving the methods of nutrition at large and among the workers in particular. Chapter II, under the headings (a) The Problem of Food Rations, and (b) Energy Requirements of the Worker, contains a careful study of the relations between nutrition and occupation, while Chapter III deals with facts on workers' diets, such as national differences in food consumption, variations in food consumption according to family incomes, the question of malnutrition as a consequence of imperfect knowledge of the proper food requirements of man according to well established nutrition values, etc. In the words of the report itself, from the discussion of the nutrition problem in Chapters II and III, there emerges the fact of a wide discrepancy between scientifically established optimum standards of nutrition and the actual food consumption of large sections of the working population. At this point the question arises: is agriculture capable of meeting the increasing demand for the necessary foodstuffs? This question is fully answered in the affirmative by the section of the Report (Chapter IV) prepared by the International Institute of Agriculture, which contains the following concluding remarks: "In theory agriculture is certainly able to respond to the increased demand for a real improvement in nutrition standards. Such an improvement would no doubt tend to diminish if not eliminate the present problem of surpluses and over-production and a considerable increase in production

might even become necessary." Obviously a re-adjustment of agricultural production to meet an increasing demand raises other problems which for their proper solution require the collaboration of the agricultural producers and all other parties concerned in the main problem of raising the nutrition standards of the populations and providing the means thereto. Social-economic aspects of the problem of nutrition present themselves and are dealt with in Chapters V and VI of the Report. Prices of food-stuffs, production costs, market organisation and distribution costs, commercial and fiscal policies, nutrition standards and consumption habits, wages, social insurance and assistance, working conditions of the labourers are subject to the inquiry and discussion of the experts who prepared the material embodied in the report which, in the concluding paragraph of Chapter VI contains the statement that "in view of the general and widespread attention now being focused on workers' nutrition, it may be reasonably expected that social and labour legislation will deal in the future with the question at issue more directly, in greater detail and in a more scientific way than hitherto." Meanwhile the report shows that agencies and methods to improve nutrition are already at work (Chapter VII). That such improvement is necessary and urgent is evidenced by the findings of the report as summarised in Chapter VIII: "Large numbers of the working population not only in impoverished or depressed areas but even in the most advanced industrial countries are inadequately nourished. Such malnourishment and under-nourishment are not the result merely of temporary dislocations due to an industrial depression, though a depression usually has an aggravating influence. It is a condition found among many employed workers in times of normal business activity." The remedy to this distressing situation is clearly indicated. It is for the proper agencies to act in accordance with the suggestions implied in the findings of the report if the causes of unwarranted and avoidable misery are to be eliminated.

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INTERNATIONAL ORGANISATION OF THE RUBBER MARKET (1)

SUMMARY. — Position of the market up to 1921. First attempts at international regulation. — Stevenson Committee of Enquiry. — The Duncan Plan and the Stevenson Plan. — The second Stevenson Plan. — Difficulties experienced in and effects of the application of the Stevenson Plan. — Further endeavours at regulation of the market. — International agreement of 1934.

POSITION OF THE MARKET UP TO 1921.

FIRST ATTEMPTS AT INTERNATIONAL REGULATION.

The first attempts at international regulation of the rubber market date from the middle of the year 1921, following on the serious crisis affecting the trade in rubber.

Rubber consumption was greatly stimulated by the development of the motor car industry and by the constantly increasing requirements of the European and American industry, and during the prewar years consumption tended to outstrip production, prices reaching their maximum in 1910 at 12s. 9d. per lb. From 1914 onwards, however, a very rapid increase took place in the production of rubber mainly as a consequence of the extensive hevea planting carried out during the preceding period, on which tapping was beginning.

Up to 1905 the only source of rubber was the forest gathering of the fresh rubber, a large proportion coming from Brazil and the remainder from Equatorial Africa. In consequence of the greatly extended demand for the commodity, there was a search for new working methods likely to be adequate to the progressive character of the demand, and the solution was found in the rubber plantation. Rubber planting began on a small scale and then rapidly extended in Malaya and in South Eastern Asia, very soon outstripping the production of forest rubber and later the requirements even of consumption.

The disproportion set up between production and consumption is however to be attributed not merely to the rapid increase of the production of plantation rubber, but also to the decline in consumption, consequent on the war. On a certain proportion of the European market, purchasing and consumption capacity had become reduced. On the other hand, the considerable increase in consumption in America was not enough to absorb the surplus production. Stocks had begun to accumulate and the prices of raw rubber fell steadily, while the

(1) The material for this article has been largely taken from the important publications on the subject by TARD, *Economie et Politique du Caoutchouc*, Paris, Imprimerie, Les Presses Modernes 1928, and HÜBNER, *Kautschuk*, Chemisch-technischer Verlag, Dr. Bodernbeuder.

cost of production perceptibly increased: in 1920 costs amounted to 9d. the lb., while the selling price did not exceed 7d. the lb.

The Rubber Growers' Association, founded in 1907 in London and grouping a large proportion of the British planters and rubber planting companies, in 1918 had requested its members to limit their production by 20 per cent. and not to exceed a yield of 215 kgs. per hectare (192 lb. per acre). Three fourths of the members accepted the proposed limitation and actually the production of 1918 fell as compared with that of 1917 by 35,000 metric tons: some part of the stocks at Singapore or at Penang could thus be exported. These results were however only temporary, as the efforts were counteracted by the action of producers not bound by the engagement. At the same time consumption fell still further.

In 1919 the Association had taken a further step by inviting its members to reduce production by 25 per cent. which 95 per cent. of them undertook to do. But the consequent diminution of production was not enough to counterbalance the decline in consumption. The market was loaded with enormous stocks and a further collapse of prices took place in 1921; raw rubber was quoted at 10d. and lower per lb. This price no longer covered the planters' costs of production, the growers' situation became serious and a proportion of the plantations were abandoned or burnt.

It was in consequence of this situation that towards the middle of 1921 the Association proposed to form a syndicate of growers to fix the price of rubber, regularise the plantation of new areas and effect all purchasing and all advances on the crops of members of the syndicates. This proposal however did not meet with success. While many British and Dutch planters were opposed to all forms of control, others would have accepted it, provided that such a measure became generally imposed by law. Other producers required as a *sine qua non* condition the financial assistance of the association. On the other hand, it was not possible to contemplate bringing into the association the small native planters numbering some tens of thousands holding about 500,000 acres of plantation out of the 3,000,000 acres representing the total area planted.

In spite of the negative result of this attempt, the Rubber Growers' Association addressed a fresh appeal to growers, inviting them to restrict their production in the course of 1922. It was however impracticable to arrive at an agreement owing to the diverse conditions of cultivation in Malaya, in Ceylon and in Java in accordance with the nature of the soil, the climate and labour conditions. Dutch growers could produce on their plantations rubber at the price of 5d. the lb. which allowed them to make a profit even on sales at the lowest price of 7 ¼d., while the British planters could not produce at less than 9d., except in Ceylon, where the conditions of production were more favourable than in Malaya.

At the same time the Association had renewed its efforts to obtain the support of its members for the continuance of voluntary restriction by means of their engagement not to produce during the first six months of 1922 a quantity of rubber in excess of that produced by themselves during the first six months of 1921, or, if preferred, not more than 75 per cent. of the rubber produced during the same period in 1920. It was successful only in obtaining the adhes-

ion of 55 per cent. of its members, while a minimum of 70 per cent. of the membership seemed essential if the plan was to have the results desired.

In 1922 another system had been devised by M. Burger; the proposal was to establish a bureau for collective selling and to constitute a joint reserve of 100,000 metric tons of rubber. (This figure was fixed on the basis of the surplus stocks at the end of 1921). This reserve was to be built up by means of a levy of 25 per cent. on the stocks of British and American dealers and the remainder by the growers. It would in fact have had to be constituted by the growers alone if the dealers had refused to give their support to the scheme. The control of this so-called Iron Stock was vested in a management council which it was expected would have held it off the market for a period of three years. Under this scheme no restriction of output was contemplated.

STEVENSON COMMITTEE OF ENQUIRY.

In the meantime the situation became even more serious. During 1921 the pressure exerted by the Rubber Association to obtain legislative action in restriction of output had met with no support from the Colonial Office. In view however of the consequences already accruing from the state of affairs and of the more serious results that might be anticipated, the Secretary of State for the Colonies, Mr. Churchill, appointed in October 1921 a committee which was to institute an enquiry and to make a report on the existing situation in regard to rubber in the British Colonies and Protectorates, for the information of the Secretary of State for the Colonies, and to indicate the measures to be taken for the improvement of this situation.

This Committee, consisting of nine members with Sir James Stevenson as chairman, presented on 19 May a report to Parliament on the existing situation in regard to rubber, indicating the measures to be taken for the strengthening of the market of this product. The actual production of raw rubber in 1920 had been 370,000 tons including 335,000 of plantation rubber and 35,000 of new rubber; in 1921 the total production had been 282,000 tons, *viz.*, 260,000 tons of plantation rubber and 22,000 of wild rubber. On the other hand the consumption had amounted to 310,000 tons in 1920 and to 265,000 tons in 1921. The world stocks of raw rubber on 31 January 1922 had been estimated at 210,000 tons for the consuming countries, 60,000 tons for the producing countries and 40,000 tons afloat.

In the absence of complete official statistics these figures represent an approximation based on careful study of official and private returns and are evidence of the gravity of the situation.

The Committee considered from four points of view the means which might be adopted for reducing the existing surplus stocks and for regulating output so as to secure equilibrium between supply and demand and to place the rubber industry on solid bases: (a) a campaign in favour of new and wider uses of rubber; (b) voluntary restriction; (c) the *laissez faire* method; (d) government action.

As regards the first of these, it was recognised that much could be done in this direction, but that it should be realised that this method could not yield an

immediate solution of the problem, as it would necessarily be some time before these new and wider applications of the commodity could result in any perceptible increase of consumption.

In regard to voluntary restriction, the Committee noted that all the efforts in this direction made by the Rubber Growers' Association had given inadequate results.

With respect to the adoption of *laissez faire*, the Committee could not recommend leaving matters in their present state till all efforts had been made to reach a positive solution of the problem.

There remained the last method, the adoption of which was recommended by the Committee, although accepting with reluctance any State intervention in the economic field, especially when this intervention was to take the form of restriction of output of an important raw material. Taking into account however the disastrous consequences which threatened alike the industry and the countries where it is practised on a large scale, the Committee resolved to recommend a measure of compulsory restriction as the sole alternative to the apparent further accentuation of the danger. At the same time however the Committee wished it to be understood that from the beginning of the enquiry it had been recognised that a restriction scheme, whether voluntary or compulsory, could not be imposed in Malaya if it were not also applied in the other countries in which rubber is produced on a large scale. The Committee added that it was not prepared to recommend a restriction scheme without such scheme being accepted also by the authorities of the Netherlands East Indies controlling the single important source of plantation rubber outside the British Colonies and Dependencies.

The following are some approximate percentage figures of the total rubber production at this date, showing the relative importance of the different centres of plantation rubber production:—

Malaya	57.5 per cent.
Ceylon	12.5 " "
Southern India and Burma	2.0 " "
Netherlands Indies	25.5 " "
Other countries	2.5 " "

100.0 per cent.

THE DUNCAN PLAN AND THE STEVENSON PLAN.

Among the numerous restriction schemes, two systems seemed to the Committee to offer a practical solution of the problem: the plan proposed in 1921 by the Duncan Committee and the new scheme proposed by the Chairman of the Committee, Sir James Stevenson.

By the former plan legislative measures were to be put into force prohibiting simultaneously the production and the export of any quantity of rubber exceeding a percentage to be strictly fixed of the quantity produced and exported during a previous specified period.

By the Stevenson plan a graduated scale of duties on export was contemplated varying with the percentage of a standard production (Standard produc-

tion = the normal output of a previous period precisely determined). Low rates were to be imposed on the quantity exported within the limits of the authorised percentage, while very high duties were to be placed on the commodity when the quantity exceeded the percentage authorised for export.

The essential difference between the two plans lies in the fact that the first prohibited the output above a fixed percentage without insuring thereby any revenue to the State, while the object of the second was to restrict export above a fixed percentage without directly restricting production: by the second scheme in addition the State was to secure revenue from the duties collected.

The following are the main lines of the first plan: (a) adoption as standard production the actual production of each grower during the 12 months from 1 November 1919 to 31 October 1920 (the aggregate estimated quantity for all the producing countries is 330,000 tons of plantation rubber); (b) restriction of the output to a percentage of the standard leaving a margin of production allowing for the execution of contracts in course or for special difficulties. Such percentage would be fixed from time to time by notification in the Government Gazette.

The main lines of the second plan are as follows: (a) the standard production was determined as in the first plan; (b) the scale of duties on exportation started from a minimum of 1*d.* and gradually increased up to 1*s.* 2*d.*

Percentage of the standard production exported	Duties payable per lb.
over 100 per cent.	1 <i>s.</i> 2 <i>d.</i>
from 91 to 100 per cent.	1 <i>s.</i> 0 <i>d.</i>
» 81 » 90 » »	10 <i>d.</i>
» 76 » 80 » »	8 <i>d.</i>
» 71 » 75 » »	6 <i>d.</i>
» 66 » 70 » »	4 <i>d.</i>
» 61 » 65 » »	2 <i>d.</i>
» 60 per cent. and under.	1 <i>d.</i>

According to this scale a duty of 1*d.* per lb., without taking account of the price of the rubber and of the quantity exported, was to be paid in permanence in place of the existing *ad valorem* duty. The rates higher than 1*d.* would however be imposed temporarily, for example for three years. When the rubber market situation had improved to the point of justifying an increase in the exportable percentage of the standard production, the elasticity essential to the working of the plan would be obtained by the fixing of the minimum duty of 1*d.* immediately below the percentage thus raised: for example, if the export of 70 per cent. instead of 60 per cent. of the standard production could be absorbed, the duty on the export of 70 per cent. and under would be fixed at 1*d.*, the duties on 71 per cent. and over would be the same as on the scale indicated.

The second plan was considered by the Committee to be preferable to the first, and easy of application.

The question of restriction by legislation was brought forward in the course of a conference which was held in 1922 under the auspices of the International Association of Rubber Planters. At this conference, attended by representatives

of British, French, Dutch, Belgian and American planters, a resolution was passed by a majority of 383 votes asking for the support of the Netherlands Government to the Stevenson plan. The British voted in favour of the restriction and of the Netherlands adhesion, the Dutch against the motion in the proportion of 1 to 2, the Americans as especially the representatives of the rubber industry against the motion in the proportion of 1 to 2. The Netherlands Government did not hesitate to declare itself against the scheme, as not desiring for the time being to introduce any legislative measure for the purpose of restricting the production of rubber in the Netherlands possessions.

These results seemed destined to wreck the Stevenson plan for which the adhesion of the Netherlands was a *sine qua non* condition.

The views of the Stevenson Committee were however influenced by the increasing gravity of the situation, together with certain new facts and several important considerations. Among these was in the first place the excessive increase in the output of rubber due to the failure of the attempt made by the growers to render voluntary restriction effective, with the consequent continued decline in rubber prices. A second consideration pointed to the adoption of restrictive measures without taking account of the attitude of the Netherlands Government, and this was the unanimous demand for such measures by the leading rubber companies, both in London and in Malaya. The deciding factor, however, in the Committee's change of attitude was the discovery resulting from enquiries made that there were possibilities of securing, on the important British plantations situated in the other producing countries, a voluntary restriction corresponding to that which might be resolved on for the territories forming part of the British Empire. The Rubber Growers' Association had obtained the promise of a co-operation to this effect in the majority of its plantations and the Committee were of opinion that a similar co-operation would make possible in the British territories a proportional reduction essential to a readjustment of supply to demand.

THE SECOND STEVENSON PLAN.

On 2 October 1922 the Stevenson Committee presented a new report modifying its original point of view and abandoning the previous question of Netherlands support. At the same time it recommended the bringing into force of the new plan of State intervention in Ceylon, the Malay States and the Straits Settlements.

In the May report the Committee had fixed the percentage of the standard production, exportable at the minimum duty, at a rate (60 per cent.); according to the new plan the authorised percentage exportable at the minimum duty was to vary according to the fluctuations in the prices of raw rubber. So that the application of the system might have the desired result, the Committee had taken steps to meet the case in which the percentage of the standard production for which the minimum export duty had been authorised should prove to be too high for reasons not foreseen at the time of the introduction of the plan. Accordingly, for the case in which in the second three months of the application of the plan or in any other three-monthly period the price of rubber had not attained at least a certain

fixed average, the Committee recommended the reduction by 5 per cent. of the quantum of the standard production exportable at the minimum duty, and if this reduction was not enough to re-establish the average price in the following three months, a further reduction of 5 per cent. was to be made at the end of three months and so on by five per cent. reduction at the end of each three months until the average price had been obtained.

The new plan fixed, for each grower who desired to export, a quantity larger than that allocated to him at the minimum rate, the minimum export duty rates being for twelve months on the following scale:

Percentage of the production standard exported		Duty charged per lb. on total export	
not exceeding	65 per cent.	. . . . .	4 <i>d.</i>
over	65 " "	{	5 <i>d.</i>
not exceeding	70 " "		
over	70 " "	{	6 <i>d.</i>
not exceeding	75 " "		
over	75 " "	{	7 <i>d.</i>
not exceeding	80 " "		
over	80 " "	{	8 <i>d.</i>
not exceeding	85 " "		
over	85 " "	{	9 <i>d.</i>
not exceeding	90 " "		
over	90 " "	{	10 <i>d.</i>
not exceeding	95 " "		
over	95 " "	{	11 <i>d.</i>
not exceeding	100 " "		
over	100 " "	. . . . .	12 <i>d.</i>

As for the first Stevenson Plan, when the rubber situation should be improved, enough to allow of increasing the quantity of standard production exportable at the minimum duty rate, the minimum duty was to be substituted in its appropriate place on the scale.

Provision was also made by the Stevenson Plan for the establishment in London of an advisory council with the function of co-ordinating the application of the plan in the countries adhering to it. The Committee suggested that this council should be composed of official and non-official members, and should undertake to give its views to the Secretary of State for the Colonies on all questions relating to the application of the plan and to advise on the alterations in the minimum duty entailed by the application of the plan.

The Committee further recommended the Governments concerned to set up local committees for the purpose of deciding on the special cases which might arise from the local application of the Stevenson Plan.

Rules to be followed by the local committees in the application of the plan were also suggested. It is of interest to note the main principles laid down by the Committee in regard to the application to each grower of the quota allocated of standard production.

According to the Stevenson Plan the standard production of an estate was to be taken to mean the quantity of dry rubber produced by that estate during the period between 1 November 1919 and 31 October 1920. If an owner was unable

to declare the quantity of rubber produced on his plantation during the period stated, it fell to the Committee to fix the total of what it considered to be the standard production of the plantation. The quantity thus fixed was not, however, to exceed the quantity obtained by multiplying the number of acres planted in rubber by the figure of the table established by the plan and indicating the production by acre according to the age of the trees, beginning from five years. If an owner showed that a proportion of his estate was planted in trees not yet tapped before 1 November 1920, his standard production would be recognised as his production from 1 November 1919 to 31 October 1920 with the addition of quantities calculated according to the scale indicated above. If an owner proved to the satisfaction of the Committee that the production of his estate during the period indicated was lower than the normal production owing to shortage of labour or unexpected illness among labourers, or owing to diseases on the plantations since restored to a normal state, or because the trees were resting or for any other cause which might reasonably be adduced, it was possible to grant him in addition to his production during the period indicated above an increment left to the discretion of the Committee, but in no case such that the total of the production of this plantation exceeded the quantity obtained by multiplying the number of acres planted in rubber by the figures of the table mentioned above.

No alteration could be made in the standard production certificates for one year from date of origin; but at the expiration of each year any owner might request the revision of the quantity assigned to his plantation on proving that since the issue of certificates new plantation areas had reached the age of five years and had entered on the period of tapping. In this case the Committee might increase the quantities assigned according to fixed rules.

Rules were in addition established for the case in which an owner had been able to prove that he had normally concluded a contract involving the delivery of a quantity of rubber in excess of the total of the normal standard which had been assigned to him referred to the quantum of restriction at the time being.

Apart from this, provision was made for the case in which the owners might adduce good reasons why the Committee should assign them as standard production a quantity other than their actual production.

The above plan, as indicated in its essential lines, was to come into force on 1 November 1922 for Malaya and for Ceylon. The other British rubber producing colonies for the most part adhered voluntarily to the plan as well as the majority of the British planters who had estates in the Netherlands colonies, in accordance with the undertaking given. Subsequently several small changes were introduced into the plan, which left the general structure unaltered but modified the rates adopted alike for exportation and for the production standard.

DIFFICULTIES EXPERIENCED IN AND EFFECTS OF THE APPLICATION OF THE STEVENSON PLAN.

Although the Stevenson Plan had laid down very precise rules for the fixing of the production standard, some serious difficulties appeared as soon as the plan was put into application. It was declared to be very difficult to determine precisely the standard production of each plantation.

Differences occur in the production conditions not only in the different countries (which is taken into account in the calculation) but also within each country according to the greater or less altitude of the plantations, the climate, the soil structure, labour conditions, etc. It was stated in consequence that for certain growers the standard production was fixed at a level which greatly exceeded the export percentage so that planters were able to accumulate unused export certificates and later on to export excessive quantities.

In addition the local committees encountered difficulties raised by growers and dealers in rubber in regard to pre-existing contracts for supply of rubber. It became necessary also to take severe measures against the disturbances caused by the coolies who had been discharged from a number of large estates on account of restrictions under the plan, as also against contraband practices, these latter being greatly facilitated by the vast extent of the coasts on which the plantations were situated and by the waterways (1)

In spite of these difficulties the plan was applied and it must be recognised that it resulted in 1923 and 1924 in a slight improvement in rubber prices, the advance becoming more marked towards the end of 1924, when the market definitely took a turn in the direction of higher prices.

In March 1925 the price of raw rubber rose from 1s. 3d. to 2s. per lb., while the average price in the course of 1922 had been 9 ½d., in 1923 1s. 3d., in 1924 1s. 2d., attaining 2s. 11 ¼d. in 1925. The London stocks which had been 70,000 tons in 1923, fell to 5,000 tons in 1925. The American stocks were reduced to almost nil.

A veritable boom followed. There was an extraordinary rise in prices which became almost prohibitive in the case of certain types of manufacture and caused heavy increases in the production costs of the American industry. This latter in consequence made representations to the United States Government which in its turn appealed to the British Government. As no alteration was made in the Stevenson Plan, an organised resistance was set up in America with the support in particular of Senator Hoover.

Efforts were mainly directed to limiting the consumption of rubber; damaged or worn out tyres were repaired more frequently again. Purchase of new tyres was postponed by the utilisation of those held in reserve; the condition of the roads was improved thus lengthening the life of the tyres. In addition the motor car factories refused to make contracts involving future deliveries, although previously such contracts had frequently been made involving delivery at six months or even a year.

As a consequence of these measures a decrease in consumption was noticeable in the United States, amounting in 1925-26 to 17 per cent. for tyres and to 23 per cent. for air chambers, and this although during this period the number of motor cars increased by some two millions.

With a view to exercising a wider influence on the market, the large consumers in 1926 decided to form purchasing pools, and also established in New York a

(1) DE MACEDO SOAREZ. Rubber. An Economic and Statistical Study. London 1930, p. 46.

new Rubber Exchange constituted by the tyre manufacturers, the importers of raw rubber and the principal agents, the object being to counteract the influence of the London market and to resist speculation and price raising.

Many of the measures applied in the United States for the reduction of consumption and the regulation of the market are, in view of the progressive increase in the number of motor cars, to be regarded as purely temporary. It was by measures of another kind that endeavours were made to diminish permanently the influence of the British market, while production was at the same time largely passing into American hands.

Companies of American manufacturers bought plantations and lands on which to plant rubber in South Eastern Asia and especially in Sumatra. At the beginning of 1928 an area of 200,000 acres had become the property of Americans in the Netherlands possessions.

It became the policy of the United States to establish plantations on American territory or in other countries, and technical commissions were set up at the public cost to study the possibility of growing rubber in different countries, which was actually effected in California, in the Philippines, in the West Indies, Brazil, Central America, Mexico and Liberia.

Other countries followed this example. The French plantations of rubber in Indo-China were extended; 5,000 acres were planted in 1920 in the Belgian Congo. In Sumatra, Malaya and Borneo Japanese purchases were made in 1925 of lands capable of yielding 8,000 tons (per annum) of the product. The Italian manufacturers, Pirelli, in 1927 purchased in Malaya and in Ceylon 9,500 acres, some part of which was already planted in rubber.

A more important aspect of these efforts to diminish the dependence of the industry on the British rubber market was the increasing utilisation of reclaimed rubber, or the reworking of old rubber material, either by itself or in combination with new rubber, for the manufacture of air chambers, pneumatic and solid tyres. The consumption of reclaimed rubber increased from 79,000 long tons in 1924, to 137,000 in 1925 and in 1928 reached 203,000 long tons, or nearly one third of the annual production of fresh rubber.

Other countries as well as the United States made increasing use of reclaimed rubber. On an approximate calculation 50,000 tons of reclaimed rubber was manufactured in Europe in the course of 1937.

The working of the Stevenson Plan was also hampered by the increased production in countries not bound by the plan, and by native production.

The former represents a natural development which requires no explanation. In the Netherlands Indies production has increased in the following proportion: in 1922 out of the total output of plantation rubber the Stevenson Committee calculated that of the Netherland Indies at 26 per cent., while the production on the territories belonging to the British Empire was represented by 72 per cent. In 1928 (the last year of restriction under the Stevenson Plan) the production in the Netherlands Indies rose to 37 per cent. while that in the British territories declined to 58 per cent. Moreover countries which prior to the coming into force of the Stevenson Plan had quite a small production, in the course of the years of restriction considerably increased the areas planted in rubber.

*Consumption of Reclaimed Rubber in Long Tons
and in Percentage of Fresh Rubber in the United States during the period 1917-1931.*

Year	Consumption		Percentage of reclaimed rubber
	Fresh rubber	Reclaimed rubber	
	long tons	long tons	%
1917	157,371	89,168	57
1919	202,303	73,535	36
1920	196,270	75,297	38
1921	169,308	41,351	24
1922	283,271	54,458	19
1923	319,700	75,200	24
1924	336,600	78,500	23
1925	387,629	137,000	35
1926	366,000	164,500	45
1927	375,000	189,000	50
1928	440,000	203,000	46
1929	470,000	224,000	48
1930	371,000	157,000	42
1931	349,000	127,000	36

(1) HÜBNER, *op. cit.*, p. 937.

The following is a table indicating the percentage of the distribution of plantation rubber production in 1928:

Malaya	44	per cent.
Ceylon	9	» »
Southern India and Burma	2.5	» »
British Borneo	2.7	» »
Netherlands Indies	37.4	» »
Indo-China	2.7	» »
Siam	0.8	» »
Other countries	0.8	» »

100.00

As regards the other factor which affected the rubber market adversely to the working of the Stevenson Plan, the following observations may be made. The production of rubber in South Eastern Asia comes from two sources: the former is that constituted by the large estates controlled directly or at least financially by Europeans, Americans or by Japanese or Chinese usually forming plantation companies; the other source is that of the rubber garden native holdings found especially in the Netherlands Indies and in Malaya. This type of production, from its special structure, constitutes a serious obstacle to any regulation of production. These holdings require very small capital and taxes and other charges are usually very low. Native plantations are superior to the large plantations in their capacity for adaptation to circumstances. When production is unremunerative owing to a serious fall in prices, it is easy for the natives to suspend production just as it is easy for them to begin it again. As the capital required

for this type of holding is limited the interest charges are very low and there are none of the administrative expenses incidental to large plantations.

It is difficult to say how far these two factors prejudicial to the working of the Stevenson Plan actually brought about the progressive price decline which on the London market in 1926 resulted in an average price over the year of 1s. 11 $\frac{3}{4}$ d. and in 1927 in an average price of 1s. 6 $\frac{1}{2}$ d., falling in 1928 to 10 $\frac{1}{2}$ d. On 4 April 1928 the British Prime Minister gave notice of the complete abolition of the restriction scheme to take effect from 1 November 1928, making the following declaration: "The Government has received the report of the Committee of Civil Research on the question of rubber restriction, and it has decided that all restriction on the export of rubber from British Malaya and Ceylon will be removed on 1 November 1928, the existing scheme being continued unaltered in the meantime" (1).

After the abolition of the Stevenson Plan the total production of rubber rose from 662,220 tons in 1928 to 862,180 in 1929, to fall again in 1930 to 818,776, in 1931 to 804,152 and in 1932 to 707,346 tons.

The consumption of raw rubber which in 1928 had been 677,000 long tons, rose in 1929 to 805,000 long tons, falling again in 1930 to 695,000 long tons, in 1931 to 676,000 long tons, and rising again in 1932 to 706,000 long tons.

Prices have continued to fall: from an average of 10 $\frac{3}{4}$ d. in 1928 and of 10 $\frac{1}{2}$ d. in 1929, they dropped to 5 $\frac{1}{8}$ d. in 1930, to 3 $\frac{3}{16}$ d. in 1931 and to 2 $\frac{1}{8}$ d. in 1932.

FURTHER ENDEAVOURS AT REGULATION OF THE MARKET.

The following is some account of the efforts made since 1928 by the countries concerned to arrive at an international agreement relating to the market of this important commodity.

In 1928 the Dutch planters met at the Hague and there proposed to constitute with the co-operation of British planters a joint sales office (2).

This scheme however had no outcome. From 1930 onwards several other plans of action were considered in various international meetings and conferences: restrictions, private or State imposed, policy as to exports (imposition of quotas in accordance with a scale), as to production, application to natives of restriction or alternatively suppression of their plantations with compensation, destruction of a proportion of the crop by flooding. Among the schemes contemplated there mention should be made of the Verubo scheme, that of the Association of rubber growers for regulation of production. Provision was made by this scheme for a 50 per cent. reduction of exports by means of a system of licenses, using as a basis the maximum of the last ten years and taking into account the production forecasts for the areas already planted. This was to be a five-year plan, in the course of which the percentage of original reductions would be modified by an international commission. The plan in question prescribed a regulation of export while the limit of production would be fixed by the Government concerned.

(1) DE MACEDO SOAREZ, *op. cit.*, p. 57.

(2) HOULLIER. I, *organisation internationale de l'agriculture*. Paris, 1935, p. 231.

TABLE I. — *World Production of Rubber from 1822 to 1932* (I)
(in long tons).

Year	Wild rubber		Plantation rubber	World production	Percentage of plantation rubber
	Brazilian varieties	Other varieties (2)			
1822	31	—	—	31	—
1830	156	—	—	156	—
1840	388	—	—	388	—
1850	1,467	—	—	1,467	—
1860	2,673	(3) ca. 2,000	—	ca. 4,673	—
1870	6,591	(3) ca. 2,500	—	ca. 9,091	—
1880	8,679	(3) ca. 5,500	—	ca. 14,179	—
1890	16,200	12,677	—	28,867	—
1892	18,450	11,620	—	30,070	—
1895	20,700	13,577	—	34,277	—
1897	22,650	17,240	—	39,890	—
1898	21,900	23,350	—	45,259	—
1899	25,100	24,686	4	49,790	—
1900	26,750	27,136	4	53,890	—
1901	30,300	24,545	5	54,850	—
1902	28,700	23,632	8	52,340	—
1903	31,100	24,829	21	55,950	0.0
1904	30,000	32,077	43	62,120	0.1
1905	35,000	27,000	145	62,145	0.2
1906	36,000	29,700	510	66,210	0.8
1907	38,000	30,000	1,000	69,000	1.4
1908	39,000	24,600	1,800	65,400	2.8
1909	42,000	24,000	3,600	69,600	5.2
1910	40,800	21,500	8,200	70,500	11.6
1911	37,730	23,000	14,419	75,149	19.2
1912	42,410	28,000	28,518	98,928	28.8
1913	39,270	21,452	47,618	108,440	43.9
1914	37,000	12,000	71,380	120,380	59.3
1915	37,220	13,615	107,867	158,702	68.0
1916	36,500	12,448	152,650	201,598	75.7
1917	39,370	13,258	213,070	265,698	80.2
1918	30,700	9,929	255,950	296,579	86.3
1919	34,285	7,350	285,225	326,860	87.3
1920	30,790	8,125	304,816	343,731	88.7
1921	19,837	2,890	271,233	293,960	92.3
1922	21,735	3,205	354,980	379,920	93.4
1923	22,580	5,420	384,771	412,771	93.2
1924	23,514	6,096	391,607	421,217	93.0
1925	27,386	6,735	481,826	515,947	93.4
1926	20,433	11,390	576,955	614,778	93.8
1927	30,952	6,740	567,504	605,196	93.8
1928	24,556	4,950	620,168	649,674	95.5
1929	22,639	6,890	838,370	867,490	96.5
1930	15,744	3,936	797,040	816,720	97.6
1931	13,320	2,680	788,152	804,152	98.0
1932	6,400	1,300	699,746	707,446	98.9

(1) HÜBNER, *op. cit.*, p. 235. — (2) In these figures there are included the other South American, Central American and Mexican kinds and especially the African varieties of mediocre quality. Up to 1914 small quantities of Asiatic wild rubber were also included. — (3) The statistical data are incomplete and in part consist of estimated values.

Although during the period beginning 1930 several measures had been taken with the object of remedying the crisis, it was only in 1934 that an international complete scheme of restriction was successfully set on foot.

Before embarking on the examination of the first international agreement for the international regulation of the rubber market, it may be of interest to supply some tables showing the most important statistics up to the last years immediately preceding the 1934 agreement. These tables refer to: I. the world production of forest and of plantation rubber from 1922 to 1932; II. world production according to distribution from 1900 to 1932; III. world consumption from 1910 to 1932; IV. average prices in London from 1911 to 1930; V. monthly prices at New York from 1928 to 1933.

INTERNATIONAL AGREEMENT OF 1934.

After lengthy negotiations which began in July 1933 between rubber planters a system of control was at last successfully initiated which was published on 30 April 1934 by the International Growers' Association. From 7 May 1934 the Governments concerned signed the agreement whereby they undertook to ensure the application of the plan in question (1).

The following are the main features of this restriction scheme:

(a) its object is to regulate production and exports so as to reduce the existing stocks to a normal figure, to effect an orderly adjustment of supply and demand, to maintain costs at a fair level and one reasonably remunerative for the production as limited;

(b) with a view to realising these objectives:

(1) new plantations are prohibited, the existing sources of production having been considered as in excess of the essential requirements of the world demand;

(2) a special tax is to be collected by the Government on exports, a tax which will be earmarked for research into new methods of rubber utilisation;

(c) the plan is applicable to the following countries: British Malaya, Netherlands Indies, Ceylon, British India, French Indo-China, North Borneo, Sarawak and Siam;

(d) an International Rubber Regulation Committee has been constituted, the main function of which is to fix from time to time the percentage of the quotas exportable from the various territories. Representatives of the rubber industry in Europe and in the United States are to be invited to appoint an expert for the purpose of submitting views to the Committee on all questions bearing on the interests of rubber manufacturers. The Committee consists of 18 members appointed by the respective Governments: Malaya 6, Netherlands Indies 5, Ceylon 2, British India 1, French Indo-China 1, North Borneo 1, Sarawak 1, Siam 1. The duration of the agreement has been fixed at four years. It came into force on 1 January 1934 and will expire on 31 December 1938. The exportable percent-

(1) Economic Committee of the League of Nations. E. 901. Geneva, 5 April 1935. Co-ordination of production and sale. Note of the Secretariat.

TABLE II. — *Rubber Production according to Continents from 1900 to 1932 (1)*
(in long tons).

Year	Wild rubber (mainly)		Plantation rubber (2) Asia and Oceania	World production	Percentage of production in Asia and in Oceania
	America	Africa			
1900	34,028	15,526	2,779	52,343	5.3
1910	63,297	20,136	10,988	94,421	11.7
1911	58,350	18,280	17,517	94,147	18.6
1912	62,169	18,905	33,327	114,401	20.1
1913	50,622	16,025	53,644	120,291	44.6
1914	49,975	7,719	74,587	123,281	60.5
1915	46,362	8,139	116,371	170,872	68.1
1916	42,001	10,372	161,842	214,215	75.1
1917	46,389	10,445	221,453	278,287	79.6
1918	31,742	7,121	181,061	219,924	82.4
1919	43,858	7,020	349,092	399,970	87.3
1920	30,568	6,401	305,088	342,057	89.2
1921	21,894	3,568	277,516	302,978	91.6
1922	24,941	3,211	379,520	407,672	93.2
1923	24,386	4,848	380,271	409,505	92.9
1924	30,326	5,594	393,953	429,873	91.7
1925	36,325	7,791	488,290	532,406	91.7
1926	35,608	8,781	583,978	628,367	93.1
1927	37,219	6,400	567,792	611,411	92.9
1928	29,100	ca. 5,500	627,626	662,220	94.8
1929	ca. 25,106	4,414	832,600	862,180	96.6
1930	ca. 16,680	ca. 3,000	799,096	818,776	97.6
1931	ca. 14,000	ca. 2,000	788,152	804,152	98.0
1932	6,440	1,260	699,746	707,446	98.9

(1) HÜBNER, *op. cit.*, p. 236. The data contained in this table do not always correspond with those of Table I, but as based on precise and for the most part official statistics, they are to be considered as the most exact. — (2) Up to the world war there were also included data relating to wild rubber in shrinking quantities. Since the war practically only plantation rubber is produced in Asia and in Oceania.

ages will be fixed from time to time in accordance with the market requirements by the International Committee, and the proportional parts constituting the basis of the calculation of these percentages have been assigned to each country as follows:

	1934	1935	1936	1937	1938
Malaya	504	538	569	589	602
Netherlands Indies	352	400	443	467	485
Ceylon	77.5	79	80	81	82.5
British India	12	15	17	18	18.5
North Borneo	12	13	14	15.5	16.5
Sarawak	24	28	30	31.5	32
Siam	15	15	15	15	15

In regard to Indo-China it was agreed that no restriction should be applied to the production of this country until it should have exceeded 30,000 tons per annum. (in 1933 the production was 17,191 tons). On any quantity of tons exceeding 30,000 and up to the equivalent of the actual French consumption

TABLE III. — *World Consumption of Raw Rubber (= Net Imports) from 1910 to 1932*
(in thousands of long tons) (1)

Consuming country	1910	1913	1916	1919	1922	1925	1926	1927	1928	1929	1930	1931	1932	Percentage of the world consumption			
														1910	1929	1931	1932
United States	42.2	52.2	117.6	238.4	296.4	390.0	365.0	375.0	440.0	470.0	371.0	349.0	393.8	43.0	58.4	51.6	55.8
Canada (2)	1.5	2.2	4.5	8.8	9.4	19.8	20.2	26.4	30.9	35.5	28.0	25.3	20.9	1.5	4.4	3.7	3.0
United Kingdom	20.5	25.3	26.7	42.7	11.7	30.1	39.7	44.8	48.5	72.0	75.0	76.6	44.1	20.9	8.9	11.2	6.3
France (2)	3.8	6.5	14.7	20.1	27.7	37.5	36.9	36.0	38.0	61.8	60.0	47.7	41.7	3.8	7.7	7.1	6.0
Germany	13.7	16.3	2.0	4.5	27.6	33.9	22.8	38.9	37.9	49.1	47.0	39.2	45.0	14.0	6.1	5.8	6.4
U. R. S. S.	6.0	12.0	9.0	0.1	3.1	7.5	6.8	12.5	8.0	12.7	18.0	30.7	30.0	6.1	1.6	4.5	4.2
Italy (2)	1.8	2.5	4.8	9.9	6.4	11.4	9.8	11.3	12.4	16.2	18.0	10.1	15.3	1.8	2.0	1.5	2.1
Belgium	2.2	3.6		4.0	0.2	2.9	2.5	6.5	7.9	9.4	11.0	11.0	9.5	2.2	1.2	1.6	1.3
Scandinavian countr. (2)	1.1	1.2	1.8	3.2	1.7	2.9	3.3	3.4	3.7	5.4	6.7	5.6	6.6	1.1	0.7	0.8	0.9
Austria and Hungary	2.0	2.8	0.5	0.3	2.6	2.5	3.0	3.3	3.5	4.5	4.0	4.0	2.4	2.0	0.6	0.6	0.3
Netherlands	1.8	2.4	0.2	2.3	3.8	0.9	2.7	0.6	2.2	3.2	2.9	2.2	2.8	1.8	0.4	0.3	0.4
Spain	0.4	0.6	1.7	3.7	0.6	1.5	2.2	2.1	3.0	3.0	2.6	2.6	4.3	0.4	0.4	0.4	0.6
Japan (2)	0.7	1.2	3.0	10.0	15.0	11.7	17.1	18.7	25.0	34.0	33.0	43.5	56.0	0.7	4.2	6.4	6.8
Australia	0.4	0.8	1.5	3.5	2.5	5.0	9.0	9.5	8.4	16.0	5.0	7.7	12.4	0.4	2.0	1.2	1.8
Other countries	0.3	0.4	0.5	1.8	1.8	3.0	4.0	5.0	8.0	12.5	12.8	21.0	21.8	0.3	1.4	3.3	3.1
Total	98.4	130.0	188.5	353.8	410.5	560.0	545.0	594.0	677.0	805.3	695.0	676.2	706.6	100.0	100.0	100.0	100.0

(1) Hübner, *op. cit.*, p. 242. Before the world war many countries included in the figures of fresh rubber consumption also those for old rubber material and reclaimed rubber. — (2) These countries do not distinguish between raw rubber and gutta-percha, balata, etc.

of the preceding year (consumption in 1933 = 71,022 tons) a 10 per cent. restriction is to be applied. Only on quantities exceeding the annual French consumption would the restriction percentage in force for the other producing countries be applied in full. A special scheme has been arranged for Siam.

The percentage of export quotas established for 1934 by the International Committee was 100 for June and July, 90 for August and September, 80 for October and November and 70 for December.

These restrictions were gradually intensified in the course of 1935; the percentage was fixed at 75 for the first quarter, at 70 for the second, at 65 for the third and at 60 for the last quarter.

During 1936 this last percentage was maintained during the first quarter, but was increased by 5 per cent. in the course of the second quarter.

At the same time the restriction percentage was not so effective in 1936 as might have been anticipated, in view of the increase in production, which rose from 996,500 tons in 1934 to 1,118,500 in 1935, and to 1,254,000 in 1936. Actually, whereas in 1935 the exportation of the countries taking part in the agreement amounted to 810,205 tons in 1935 as against 1,017,900 tons in 1934, in the course of the first months of 1936, with an export percentage fixed at 60, the export has been 130,634 tons, while during the same period of 1935, with an export percentage fixed at 15 per cent. more (75 per cent.), the exports amounted to 131,939 tons.

As might be expected the exportation from countries not bound by the agreement has shown a marked tendency towards increase. This fact has not however caused difficulties as the exports from these countries in the course of 1935 represented only 2.4 per cent. of the total rubber export.

TABLE. IV. — *Average Prices for the Standard Qualities of Raw Rubber according to Quotations in London (the prices refer for the period 1890 to 1910 to "Gardcure Fine Para" and for the period 1911 to 1933 to "First Latex Crêpe"). (1).*

Year	Average price	Year	Average price	Year	Average price
	s. d.		s. d.		s. d.
1890	3 5 1/2	1907	4 4	1920	9
1892	2 9 1/2	1908	4 0 1/2	1921	10 1/2
1895	3 2	1909	7 1 1/2	1922	1 9 1/2
1897	3 6 1/2	1910	9 6 1/2	1923	1 3
1898	4 0 1/2	1911	5 5 1/2	1924	1 2
1899	4 3	1912	4 9	1925	2 11 1/4
1900	4 3 1/2	1913	3 0 1/4	1926	1 11 3/4
1901	3 8	1914	2 3 1/2	1927	1 6 3/4
1902	3 4 1/2	1915	2 6	1928	10 3/4
1903	4 1 1/2	1916	2 10 1/2	1929	10 3/8
1904	4 10	1917	2 9 3/4	1930	5 7/8
1905	5 6	1918	2 3 1/2	1931	3 3/16
1906	5 3 1/2	1919	2 1 1/2	1932	2 7/8
				1933 (March) . .	2 1/2

(1) Hübner, *op. cit.* p. 937.

TABLE V. — *Prices of Plantation Rubber (Crêpe, First Latex) from 1928 to 1933 in New York (cents per lb.) (1)*

Periods	1928	1929	1930 (2)	1931 (2)	1932 (2)	1933 (3)
January (first Friday) . . .	40 5/8	18 3/8	(3)	8 1/2	7	(5) 4 1/16
February " " . . .	37 3/8	22 3/4	15 7/8	7 3/4	4 3/4	3 11/16
March " " . . .	29 1/8	26 1/2	15 5/8	8 1/4	4 1/2	4
April " " . . .	21 1/8	22 3/4	15 5/8	7	4 1/4	3 7/8
May " " . . .	19 3/8	20 1/4	14 5/8	6 1/4	(5) 4 1/2	(5) 5 3/8
June " " . . .	19 1/2	21 3/4	13 1/2	6 3/4	3 11/16	(5) 6 15/16
July " " . . .	19	22 1/4	12 1/2	7 1/4	3 5/8	(5) 8 9/16
August " " . . .	20 1/8	22 3/8	10 7/8	5 7/8	4 1/16	8 5/8
September " " . . .	18 3/4	21	9 1/4	5 1/2	4 3/4	8 1/8
October " " . . .	19 3/8	20 3/4	8 3/8	5	4 1/16	8 7/8
November " " . . .	19 3/8	18 3/4	8 5/8	5 1/8	4 3/16	8 15/16
December " " . . .	18 3/4	17	9 1/2	5	4 1/16	10 1/2
Annual average . . .	22 5/8	21 1/4	12 3/8	6 1/2	4 3/8	6 15/16

(1) International Yearbook of Agricultural Statistics, 1932-33 and 1933-34. International Institute of Agriculture, Rome, 1933 and 1934. — (2) Crêpe No. 1, thin latex. — (3) Standard thin latex. — (4) Not quoted. — (5) Nominal.

The consumption of crude rubber was 811,200 tons in 1933, 939,200 tons in 1934 and 947,600 tons in 1935; during the first months of 1936 it declined to 157,000 tons as compared with 163,900 during the same period in 1935.

Stocks which in 1933 were 616,400 tons rose to 679,000 tons in 1934 to fall in 1935 to 575,700 tons. During the first months of 1936 the stocks amounted to 539,000 tons as compared with 652,700 tons during the same period of 1935.

In respect of prices, in London the effects of the restriction have been somewhat considerable. From an average price of 3 1/4 d. per lb. in 1933 there was a rise to 6 7/32 d. in 1934, and after a decline to 6 d. in the course of 1935 it again rose to 7 1/2 d. in the course of the first months of 1936 as compared with 5 3/4 d. registered in the course of the first months of 1935.

The valuable note in the *Economist* on the consequences of the agreement on the rubber market concludes by stressing the favourable effects of the agreement on the price of crude rubber and adds that this price is undoubtedly remunerative for the best growers. The decrease in consumption during the first months of 1936 is noted as being in relation with the price rise, contrary to the view of those who are inclined to consider these as independent phenomena, and the article ends by expressing the opinion that it would be in the interest alike of the growers and of the consumers that the International Rubber Regulation Committee should undertake to ensure rather an increase in consumption than a rise in prices (1).

F. ARCOLEO.

(1) *The Economist*, 30 May 1936, p. 476.

FARM ACCOUNTANCY IN THE PUNJAB (INDIA) FROM 1927-28 TO 1932-33

Farm accounts relating to certain irrigated holdings in the Punjab were published for the first time in 1927-28. In 1928-29 the enquiry was extended to the districts of Jullundur, Ludhiana, Hoshiarpur, Amritsar, Multan, Rohtak and Jhelum. These regions of an ancient Aryan population are characterised by certain special conditions. The Punjab, although actually producing wheat and cotton in abundance, would be no more than a desert, had it not been for the engineering operations which rendered utilisable the shifting water courses of its rivers with their constant deposits of sand. The alluvial soils are less fertile than those of the Ganges, are extremely permeable, receive very little rainfall and are continually formed into dunes by the winds to which they are exposed; in consequence irrigation is essential. Irrigation, however, takes diverse forms according to the regions. In the foot hill regions of the Himalaya, there is a fairly abundant rainfall (about 39 inches of precipitation is registered), some part of the rainfall occurring from January to March; the water table is found everywhere from 16 to 19 feet below the surface. Towards the South, at Panipat, it is necessary to go to twice that depth. In the more arid districts of the West and South West, no cultivation is possible apart from large scale irrigation. Under British administration the earlier irrigation channels have been replaced or supplemented by perennial canals, or in certain cases by "Kharif canals." The area under irrigation from canals constructed before the war extends to about 6,800,000 acres. The Triple Canal Scheme, completed in 1917, draws off part of the waters of the Jhelum to traverse the *Doabs* which succeed each other up to the Sutlej.

In 1919 there were added to the immense areas already under irrigation 1,900,000 acres, with 3,330 miles of canals. The Sutlej Valley Scheme, recently accomplished, was designed not only to extend the cultivated area in the Punjab, but also to increase agricultural returns.

It was estimated that in 1925-26 the irrigated area was 10,500,000 acres. In these new settlements, railways and roads have been constructed by the Government, village sites have been laid out on a symmetrical plan, with streets at right angles and wells in the centre; the lands have been assigned in small holdings and the costs of operation covered by the sale of lands and of irrigation water. Not more than from 10 to 20 years sufficed for the transformation of these areas from jungle inhabited only by shepherds or robbers.

Irrigation makes possible the growing of valuable crops and in fact it is only in this way that the costs of irrigation can be met; hence the Punjab peasant farmers grow for export. Sugar cane has given place to cotton which covers from 20 to 40 per cent. of the cultivated area between Lahore and Multan; but the main source of the wealth of the Punjab is wheat which occupies from 20 to 40 per cent. of all the cultivated land, and in Multan from 40 to 60 per cent.

In the Canal Colonies of the Punjab poverty is practically non-existent. They cover an area of more than 5,000,000 acres out of the whole extent of irrig-

ated territory, and the level of rural prosperity reached is probably higher than in any other country of Asia, not excepting Japan. Modern equipment is jointly owned by the farmers. The irrigation channels are replenished by the use of Persian wheels, a device for lifting water, bullock-driven.

The standard of living is higher in the Punjab than in the other parts of India. To live on the products of the soil, a family must own at least 13.5 acres at Lyallpur, and 20 acres in the Montgomery district, where the water is less plentiful. Holdings are: (a) under direct cultivation; (b) cultivated on a *batai* or share farming system, and (c) under cultivation with the help of *siris*, or associated workers. The *siri* does not receive cash wages, but a share of each of the products, except forage crops. In the *batai* system of farming, the payments in kind to the *kamins*, or servants, are usually made from the total production, previous to any division between the landowner and the tenant. The tenant harvests a part of the land himself, either by his own labour or paying hired labour in kind; the remainder is harvested at the joint expense of the tenant and the landowner. The wages rate is uniform and is 4 bundles of the gathered produce per acre. The same system is followed for the winnowing. Cotton picking is done by workers paid in kind, at the rate of one twelfth of the harvest.

The number of days worked yearly per acre is eight for oxen and from 17 to 22 days for men; at Lyallpur, where the average area of a holding is about 13 acres, a holding absorbs 170 man days per year. In some parts of India, where multiple cropping is not practised, the cultivators are idle for nearly nine months in the year.

The Board of Economic Enquiry has made the following calculation of the cost per acre of lifting water by Persian wheel for bringing an average crop to maturity on well-irrigated holdings under observation from 1928-29 to 1932-33:

Year	Total cost per acre	
	Including manual labour	Excluding manual labour
	Rs. a. p.	Rs. a. p.
1928-29	48 0 4	32 11 7
1929-30	40 13 1	27 14 4
1930-31	32 10 8	20 11 7
1931-32	31 5 6	18 13 3
1932-33	34 8 0	21 11 1

(1) R = rupee, a = anna, p = pie. One rupee = 16 annas; one anna = 12 pice.

The cost of this irrigation was lowest in 1931-32, since, owing to the fall in prices of agricultural commodities, the expenses on bullock labour were very greatly reduced. The increase in cost in the following year is due to an increase in overhead costs amounting to Rs. 1/13/6 per acre, and to increased charges for bullock labour amounting to Rs. 1/0/4 per acre.

As the number of waterings required to mature a crop depends in the first instance on the amount and distribution of rainfall, a table may be given showing total rainfall over five years at the nearest recording stations to the farms under study.

Place	Rainfall in inches					
	Normal	1928-29	1929-30	1930-31	1931-32	1932-33
Jullundur	26.96	12.96	22.48	24.47	24.74	22.39
Nakodar (Jullundur)	22.47	14.21	15.51	22.45	20.37	24.10
Phillaur (Jullundur)	24.16	13.64	23.83	29.28	25.22	29.47
Ludhiana	26.21	18.47	22.27	25.02	25.88	26.41
Jagraon (Ludhiana)	21.01	13.47	17.09	21.99	23.02	18.15
Hoshiarpur	35.51	22.18	29.86	28.16	32.39	40.61
Tarn Taran (Amritsar)	22.24	19.41	21.44	21.74	23.25	10.76
Shujabad (Multan)	5.02	2.81	9.66	3.02	3.79	3.71
Sonepat (Rohtak)	23.00	11.35	15.91	11.61	21.79	24.46
Pind Dadan Khan (Jhelum)	17.58	12.83	19.90	16.02	9.11	21.52

It appears from inspection of these figures that 1928-29 was an exceptionally dry year. The rainfall of 1929-30 is seen to have been much more abundant and in 1930-31 it almost reaches the normal level; in 1931-32 the position is maintained and even improved, except at Nakodar and at Pind Dadan Khan. Comparing 1932-33 with 1931-32, it will be observed that in 1932-33 the total rainfall was higher at Nakodar, Phillaur, Ludhiana, Hoshiarpur, Sonepat and Pind Dadan Khan, and lower at Jullundur, Jagraon, Tarn Taran and Shujabad. In comparison with the normal rainfall, this rainfall was higher at six places and lower at four.

The following table shows the average figures of work done by a pair of bullocks on well-irrigated holdings:

Year	Days worked per pair per annum			Days worked per acre		
	Total	Cultivation	Irrigation	Total	Cultivation	Irrigation
1928-29	180.4	100.3	80.1	40.5	21.2	19.3
1929-30	165.3	88.7	76.6	41.3	21.0	20.3
1930-31	174.4	98.9	75.5	41.3	22.7	18.6
1931-32	155.2	82.4	72.8	32.6	15.8	16.8
1932-33	155.5	81.6	73.9	38.8	19.8	19.0
Average	166.2	90.4	75.8	38.8	20.0	18.8

Nearly half the labour of the bullocks is thus absorbed by the necessities of irrigation. The manual labour required for the working of the Persian wheel is usually provided by the cultivator and the members of his family.

Apart from the Multan district, where special conditions prevail well-irrigation is used in the *rabi* season, only that is, at the time of the growth of the cereal crops. In Amritsar some part of the holdings under observation receive both well and canal irrigation. Irrigation produces different results according to the quality of the soils, and the nature of the crops grown. It is prob-

ably on account of the poverty of the soil that in the Multan district indigo can be grown only when there is an early supply of water from the canal.

Among the conditions determining the wide variations in the annual returns of the holdings, there must be ranked the amount of the rainfall, the price movements of agricultural products and the measures taken by the Government in favour of agriculture.

The following table shows the prices of agricultural commodities in the Punjab from 1928-29 to 1932-33, per maund (82.284 lb.) in each case:

Prices of Agricultural Products (1).

Year	Wheat	Gram	Rapeseed	Gur (2)	Cotton	
					Desi (Indian)	American
	1	2	3	4	5	6
	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
1928-29	4- 6- 0	4- 12- 0	7- 0- 0	6- 2- 0	10- 0- 0	13- 2- 0
1929-30	3- 2- 0	3- 12- 0	5- 12- 0	6- 5- 0	6- 15- 0	8- 15- 0
1930-31	1- 9- 0	1- 14- 0	3- 13- 0	4- 2- 0	4- 7- 0	5- 9- 0
1931-32	2- 1- 0	1- 13- 0	3- 8- 0	3- 13- 0	5- 7- 0	6- 10- 0
1932-33	2- 11- 0	2- 4- 0	3- 8- 0	2- 12- 0	5- 10- 0	6- 14- 0

(1) Prices in gold francs give a different picture of the situation, as the rupee has considerably fallen. The following are the prices in gold francs.

	1	2	3	4	5	6
1928-29	8.23	8.93	13.17	11.52	18.81	24.69
1929-30	5.85	7.02	10.76	11.82	12.99	16.73
1930-31	2.92	3.50	7.12	7.70	8.28	10.39
1931-32	3.08	2.71	5.23	5.69	8.12	9.89
1932-33	3.57	2.99	4.65	3.65	7.48	9.14

(2) Raw unrefined cane sugar in pieces.

A serious weakening of prices began to be noted in 1929-30 which became still more marked in 1930-31. As wheat is the most important crop in the Punjab, the return from the farm holdings fell considerably in 1930-31 (see below, table of returns). As soon as the economic situation became abnormal, the Government took measures with the object of relieving the strain on the farmers. A remission of 25 per cent. was made, in the rice and cotton growing areas, on land revenue when this exceeded the amount of Rs. 8/8/0 for rice and Rs. 7 for cotton per acre. Holdings in Rohtak, Amritsar, Montgomery, Lyallpur and Multan benefited by these remissions.

From 1930-31 to 1931-32, wheat and cotton prices advanced, the former by 32 per cent. and the latter by 21 per cent. There was no material change in gram prices in 1931-32; on the other hand, prices of rapeseed and of *gur*, which in 1930-31 had not shown so steep a fall as those of wheat and cotton, continued to decline. On the whole prices of agricultural commodities were more favourable to the cultivator in 1931-32 than in the preceding year.

In 1931-32 however weather conditions were far from favourable to the crops, which were damaged by violent winds and excessive rains in certain districts. In the districts of Lyallpur and Jhang the wheat suffered from the violence of the storms. The cotton crops and in particular the *desi* varieties were attacked by bollworm. Partial remissions were made on the land revenue, to a larger extent than in the previous year.

From 1931-32 to 1932-33, prices of wheat and gram advanced respectively by 10 annas and 7 annas per maund. Cotton prices continued to advance although much more slowly than before. Rapeseed prices remained at the level of the previous year, there being no foreign demand for this crop. The price of *gur* had fallen continuously since 1929-30; even in the year of lowest general prices, 1930-31, its price stood higher by Rs. 1/6/0 than in 1932-33; the low price figure in this latter year was due to large imports of *gur* from the adjoining districts of the United Provinces. The prices of 1932-33 showed generally an upward tendency, but they were still much below the pre-crisis level.

The condition of crops was on the whole better in 1932-33 than in 1931-32. Except in the districts of Sargodha, Multan and Amritsar, where yields were low owing to bollworm attacks and shortage of canal water, cotton gave good results on most of the holdings under observation. In the Lower Chenab Canal Colony the water supply at the sowing time of the *rabi* crops was inadequate, and as a consequence the area under wheat was below normal. Even after the sowing of this crop, there were frequent closures of the canal, but the winter rains were adequate. The season was exceptionally mild at the ripening season, and the wheat grains were accordingly plump and well developed. In some parts of the Province there was damage done by hailstorms, but on the whole the outturn was good.

In these conditions, it was not felt by the Government to be necessary to give general remission of land revenue, although in some regions a measure of remission was granted.

It remains to examine the financial position of the Punjab farmers during the five years under review. The table showing gross return, farming expenses and net return may be consulted for this purpose.

Only the figures in rupees per acre are here taken into consideration; the values in gold francs would not give an exact picture of the situation, as the rupee has been much affected by the variations in the exchange. The gold franc values will however supply points of comparison for European readers.

In 1928-29 and in 1929-30 earning capacity was lowest in the Multan district. In 1929-30 the canal water arrived too late and the indigo crop failed to grow. In 1928-29 the farmers of the Amritsar district did best; to obtain gross income as high as those obtained at Lyallpur, Rohtak and Jullundur, their expenditure was less, and the net income was double of the average net income. In 1929-30 there was a decline in the average net income; the gross income was reduced more or less considerably according to the districts. In one district only was there an increase, *viz.*, in Hoshiarpur.

From 1929-30 to 1930-31 the average gross income in rupees of the canal irrigated holdings declined by 48.8 per cent, and those of the well-irrigated holdings by 43.6 per cent. The Risalewala holding in the district of Lyallpur

Gross Return, Farming Expenses and Net Return

LOCALITY	Gross Return				
	1928-29	1929-30	1930-31	1931-32	1932-33
Jullundur	83-15-6 390.31	66-5-7 306.91	47-7-2 218.92	41-6-7 152.78	50-13-9 107.02
Ludhiana	39-11-11 184.74	39-1-2 180.74	24-9-6 113.47	20-10-2 76.13	40-0-2 112.63
Hoshiarpur	60-4-1 280.07	72-6-10 335.03	46-1-9 212.74	46-0-0 169.71	69-4-7 227.54
Amritsar	87-10-11 407.55	53-15-8 249.70	39-13-10 183.92	30-10-8 113.13	49-13-6 163.69
Multan	33-14-2 157.51	32-1-3 148.39	22-2-2 107.13	19-5-5 71.34	35-1-5 115.23
Rohtak	85-1-11 395.65	70-9-0 326.41	46-8-4 214.64	43-15-4 162.18	51-0-1 108.73
Jhelum	— —	— —	20-15-4 96.69	32-4-3 119.03	40-2-4 131.84
Lyallpur	97-8-8 453.39	89-10-5 414.72	49-8-5 228.50	50-4-11 185.60	64-13-6 212.05
Montgomery	65-9-7 304.91	63-1-8 291.91	40-8-9 187.06	38-4-6 141.22	50-0-9 105.43
Sargodha	67-5-8 313.06	34-0-9 157.48	21-7-1 98.92	24-10-0 90.86	33-10-2 110.46
Averages:					
Canal-irrigated holdings	95-11-11 445.04	86-14-6 402.02	47-10-0 219.73	48-4-6 178.12	61-15-11 203.59
Well-irrigated holdings	63-3-1 293.74	50-15-5 235.74	31-14-3 147.13	30-7-11 112.51	45-2-7 148.31
Total	87-2-0 404.96	77-14-0 360.23	43-1-4 198.78	42-12-9 157.90	56-13-6 186.68
Excluding the Risalewala farm (Lyallpur):					
(a) Canal-irrigated	64-7-1 299.54	53-11-4 248.44	29-8-1 136.13	33-15-11 125.41	38-3-9 125.56
(b) Total	63-8-1 295.17	51-11-11 239.37	31-4-3 144.24	31-6-11 115.97	43-2-3 111.67

(1) The figures of the first series, for each group, are expressed in rupees per acre, those of the second

Gross Return, Farming Expenses and Net Return in Punjab Farm Holdings from 1928-29 to 1932-33.

Farming Expenses					Net Return				
1928-29	1929-30	1930-31	1931-32	1932-33	1928-29	1929-30	1930-31	1931-32	1932-33
45-3-6 210.19	42-8-1 196.63	35-10-5 164.48	27-2-1 100.10	30-3-0 99.13	38-12-0 180.12	23-13-6 110.28	11-12-9 54.44	14-4-6 52.68	20-10-9 67.89
18-8-8 80.19	26-12-10 123.97	21-2-4 97.56	12-4-1 45.22	17-3-8 56.59	21-3-3 98.55	12-4-4 56.77	3-7-2 15.91	8-6-1 30.91	23-2-6 76.04
30-12-6 184.91	40-15-3 189.43	33-7-5 154.39	28-9-8 105.54	33-10-7 110.55	20-7-7 95.16	31-7-7 145.60	12-10-4 58.35	17-6-4 64.17	35-10-0 116.99
23-5-6 108.50	26-3-8 121.33	25-6-2 117.13	21-13-6 80.58	26-6-3 86.67	64-5-5 299.05	27-12-0 128.37	14-7-8 66.79	8-13-2 32.55	23-7-3 77.02
19-2-8 89.08	18-7-6 85.43	14-4-1 65.78	12-14-0 47.49	21-2-2 69.41	14-11-6 68.43	13-9-9 62.96	7-14-1 36.35	6-7-5 23.85	13-15-3 45.82
51-1-11 251.56	52-8-9 243.08	33-6-11 154.25	25-15-4 95.78	27-10-6 90.82	31-0-0 144.09	18-0-3 83.33	13-1-5 60.39	18-0-0 66.40	23-11-7 77.91
— —	— —	20-1-11 92.81	21-7-7 79.22	23-3-8 76.29	— —	— —	0-13-5 3.88	10-12-8 39.81	16-14-8 55.55
43-10-5 202.00	45-3-10 209.27	37-9-6 173.45	31-12-9 117.30	33-9-1 110.24	53-14-3 250.49	44-6-7 205.45	11-14-11 55.05	18-8-2 68.30	31-4-5 102.71
22-14-0 100.33	31-0-11 143.67	26-0-5 120.07	19-14-5 73.41	20-11-11 68.13	42-11-7 198.58	32-0-9 148.24	14-8-4 66.99	18-6-1 67.81	29-10-1 97.30
32-2-1 149.35	21-8-11 99.71	14-10-4 67.56	14-8-1 53.52	15-15-4 52.41	35-3-7 163.71	12-7-10 57.77	6-12-9 31.36	10-1-11 37.34	17-10-10 58.05
42-11-9 108.63	43-15-4 203.35	35-14-10 165.76	30-3-10 111.57	31-11-6 104.16	53-0-2 246.41	42-15-2 198.67	11-11-2 53.97	18-0-8 66.55	30-4-5 99.43
31-1-1 111.41	32-7-11 150.32	24-1-5 111.12	19-11-5 72.72	24-6-7 80.17	32-2-0 149.33	18-7-6 85.42	7-12-10 36.01	10-12-6 39.79	20-12-0 6.14
30-10-4 121.27	41-1-3 190.03	32-8-2 150.00	26-15-11 99.61	29-7-7 96.80	47-7-8 220.69	36-12-9 170.20	10-9-2 48.78	15-12-10 58.29	27-5-11 89.88
30-11-9 112.85	29-8-4 136.55	21-9-6 99.63	19-1-6 70.45	19-5-3 63.47	33-11-4 156.69	24-3-0 111.89	7-14-7 36.50	14-14-5 54.96	18-14-6 62.09
30-15-9 111.01	31-10-8 146.48	23-6-11 108.11	19-8-9 72.11	22-14-6 75.22	32-8-4 151.16	20-1-3 92.89	7-13-4 36.13	11-14-2 43.86	20-3-9 66.45

ries, in gold francs per hectare.

is a Government-owned farm administered by the Department of Agriculture. As a model farm its yields were the highest in each year, but as the area is some 802 acres it cannot be included among the farms of *zemindars*, or rural landowners. Hence the average results give a misleading idea, and for this reason at the foot of the table the results of the Risalewala farm are deducted from those of the canal irrigated farms and from those of all the holdings taken together. The figures obtained show that in 1930-31 the gross income has declined in a much larger proportion than the farming expenditure. It is not surprising that the falling off in the net income follows the same course as that of the gross income.

The decline by stages of the net income was checked at the end of 1930-31. The reason for this is to be found in the reduction of the farming expenses in 1931-32, the gross income remaining the same as in 1930-31. This shows that the Punjab cultivators were better able to adapt themselves in 1931-32 than in the previous year to the new conditions brought about by the depression. The assistance received from the Government had contributed to their improved position. Multan is each year the district in which the net income obtained is lowest. The net incomes obtained on holdings in Ludhiana, Jhelum and Sargodha remained below the average up to 1932-33.

Owing to more remunerative prices and to a higher yield of wheat following on improved climatic conditions, the net income of nearly all the holdings was higher in 1932-33 than in 1931-32. If it is also somewhat higher than the net income in 1929-30, this is not on account of the gross income since that is well below the level maintained in 1929-30; it is because in 1932-33, in spite of the increase in irrigation costs, the farming expenses remained somewhat further behind the average of 1929-30 than did the gross income. The best results were obtained in the districts of Hoshiarpur and Lyallpur. Although the cotton plantation yields were affected, as already mentioned, by bollworm and shortage of canal water, the gross income and the net income in the Amritsar district were higher than the average; on the other hand, these unfavourable circumstances had an effect on the results of the farm holdings of Multan and Sargódha where natural conditions are less advantageous. Jhelum is also a region of poor returns. The holdings showing most elasticity of returns are those in the Jullundur, Lyallpur and Montgomery districts. In spite of this difference in results, the figures of the table show clearly the extent of the economic recovery in the watered and in the dry regions of the Punjab in 1932-33, a recovery which was noticeable as beginning in 1931-32 when the prices of agricultural commodities began to rise.

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ORWIN, C. S. and DARKE, W. F. Back to the Land, P. S. King and Son, Ltd, London, 1935, pp. 93.

STAPLETON, R. G. The Land, Now and To-morrow. Faber and Faber, Limited, London, 1935, pp. 336.

Of the three books listed above, the first two deal with the problem of land settlement in Great Britain; the third deals with the larger question of land utilisation.

" The Agricultural Dilemma " is the report of an unofficial enquiry organised by Viscount Astor and Mr. B. Seeböhm Rowntree into the question whether it was possible to settle unemployed persons on the land to such an extent as would afford a useful contribution to the solution of the unemployment problem. This, at any rate, was the main object of the enquiry, but its scope was somewhat widened and the report became, in the words of the preface, " an attempt to survey objectively and thoroughly the possibilities of increasing the agricultural population."

The conclusions are mainly negative. The report states categorically that it is illusory to suppose that agriculture offers a promising outlet for the absorption of unemployment. The grounds upon which this conclusion is based are fully set out. Briefly they may be thus stated. The imports into Great Britain of commodities such as fruit, vegetables, poultry and eggs, which could easily be produced in larger quantities at home and which represent comparatively minor interests to producing countries abroad have already been curtailed substantially in recent years, but this has not affected noticeably the declining trend of the agricultural population. By restricting drastically imports of such staple foodstuffs as wheat, beef, mutton and bacon, scope could be found for a substantial increase in domestic agricultural production, but the pursuit of such a policy would seriously aggravate the economic difficulties of the world, and would entail for Great Britain a substantial rise in the cost of living, a further loss of export trade and an increase of unemployment in the exporting industries. A drastic restriction of food imports would involve a reduction of the mercantile marine and of the ship building industry and though the volume of imported food supplies would be reduced the difficulty of securing those supplies in time of war would be increased. Moreover it would be impracticable to increase wheat production in Great Britain on the scale that would be necessary to lessen appreciably the dependence of the country on overseas supplies and the alternative policy of storage to accumulate a war reserve would be much less costly. The smaller family farms have displayed a remarkable power of survival under the difficult conditions of recent years, but it would be unreasonable to suppose that their numbers might be greatly increased. Most of the more successful family farms are largely dependent on the production of milk, which is already being produced on a scale markedly in excess of the demand at the current retail price. The specialised small holdings devoted to the intensive production of fruits, vegetables, pigs, eggs and poultry have, in many cases, done remarkably well in the past, but they have now to face a growing competition from the larger farms, which are more and more taking up these branches of production, and in the case of vegetables from allotments and private gardens as well.

While the report concludes that little is to be hoped from settlement schemes in which the men settled are expected to earn their livelihood from the land, it urges that the system of allotments might be extended with advantage and might be adapted so as to make a useful contribution to the relief of unemployment in the depressed areas.

The title of the second book, "Back to the Land," might suggest that it had a propagandist aim, but, on the contrary, it is an impartial survey of the various efforts made in Great Britain to promote small holdings and the conclusions reached are almost identical with those of "The Agricultural Dilemma." The authors show that the Small Holdings Acts have been moderately successful in providing an opportunity for agricultural labourers and other persons already engaged in agriculture or other rural occupations to obtain land and, if successful, to enlarge their holdings. They show, too, that the family-farmer, whom they regard as the real small holder, even if his holding exceeds the limits of area usually assigned to small holdings, is of fundamental importance in British rural economy. His standard of living can never be high, but his position gives him a stability that few producers of primary commodities enjoy. If times are bad, the margin between the receipts and the payments of the family-farmer may be very small, but there is generally some margin, and he adjusts his expenditure on his own living accordingly. Much of the farming land in the western half of England and, to a less extent, in the rest of the country is occupied by farmers of this type. They are successful when measured by the standard of life which satisfies them, but very different in every particular—upbringing, experience, character and physique—from the members of the industrial classes who would be involved in the movement "back to the land." They are men who have been bred on the land, and the only generalisation permissible from their example is that there is a living on the land for the man who is bred to it and who can occupy so much of it as will employ him and his family, full-time, with little or no additional labour.

The authors set out the difficulties in the way of land settlement as a form of industrial relief, and reach the conclusion that the attempt to promote it for this object could only succeed at an enormous sacrifice demanded of the settlers themselves and of the rest of the community. As a palliative for unemployment they commend the provision of allotment gardens for unemployed workers, as carried out, for example, by the Allotments Committee of the Society of Friends, and urge the rapid extension of this work through local administrative bodies at the expense of the State.

Mr. Stapledon approaches the problem of land utilisation from a social rather than an economic point of view. His desire is to see the limited land surface of Great Britain used in such a way as to produce the maximum amount of health, pleasure, mental balance, and food for the population. His book, accordingly, deals with many aspects of land improvement—notably the improvement of hill pastures, with which his name is specially associated—and many different methods of utilising the land for the better attainment of the objects that he has in view. The agrarian policy that he favours is the furtherance of owner-occupation.

ANNUARIO ITALIANO DELLE IMPRESE ASSICURATRICI 1936, ANNO XIV. — Federazione Nazionale Fascista delle imprese assicuratrici, Roma-Milano.

The Fascist National Federation of Insurance Undertakings has published also in 1936 the Italian Year-Book of Insurance Undertakings. This volume, which has recently appeared, contains not only the balance sheet and the profit and loss accounts of Italian and foreign insurance undertakings in Italy, but also other interesting information, notably on the Fascist National Federation of Insurance Undertakings,

on the Fascist National Association of Managers of Insurance Undertakings and on the societies and consortia formed amongst such undertakings. There follows a list of local insurance companies, a list of companies that are being wound up, of bankrupt companies and of companies that have been forbidden to carry on insurance business, a list of commissioners for the ascertainment of losses, and, lastly, a brief statistical summary of the insurance industry in Italy.

The Fascist National Federation of Insurance Undertakings also publishes from time to time a collection of the laws, decrees and circulars that regulate insurance business in Italy. The last publication of this kind dates from 1934 and offers a remarkable contribution to the knowledge of the organisation of insurance in Italy. It is a large volume of 745 pages which deals not only with the legislation regarding private insurance, but also with the legislation relating to social insurance, with measures of a corporative character and various fiscal, social and other measures regarding insurance.

This rich material is arranged very scientifically, so that study and consultation are extremely easy and convenient. It is stated that a new edition of this important publication will appear next year.

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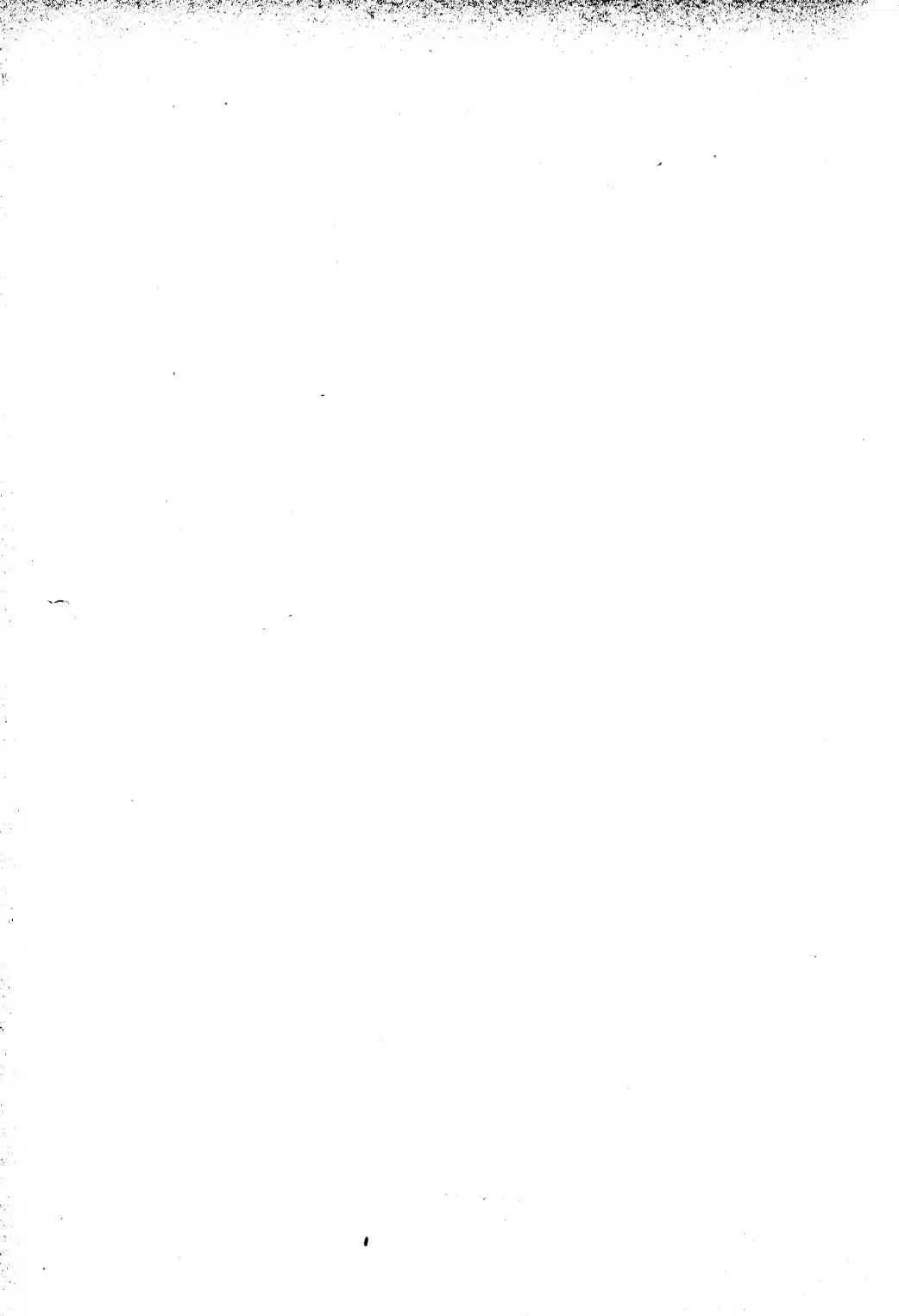
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STUDY OF THE RESULTS OF FARM ACCOUNTANCY IN SCOTLAND IN 1932-33 AND 1933-34.

SUMMARY: Scottish farms under report. — Value of the figures. — Governmental measures in 1932-33 and in 1933-34. — Distribution of the cultivated area and crop yields. — Financial results in 1932-33: gross return, farming expenses, net return; prices. — Financial results in 1933-34: gross return, farming expenses, net return; prices.

The Fifth and Sixth Annual Reports of the Department of Agriculture for Scotland on the Profitableness of Farming in Scotland contain a detailed analysis of the accountancy results of 206 Scottish farms in 1932-33 and of 239 farms in 1933-34 (1). An extract will be presented here of the most important observations to be made thereon.

The number of the farms reviewed shows a yearly increase, and there is a tendency towards a more even distribution of farms between the various groups. In 1932-33 a new group, the fifteenth, was added.

The value of the enquiries based on the results of farm accountancy depends on the number of farms under report, their distribution and the continuity of the investigations. To quote from the Fifth Report: "By reason of increasing numbers, of the inclusion of a larger number of types and of greater continuity, the material presented approaches still more closely to an adequate basis for the consideration of the profitableness of Scottish agriculture in general." The Department now considers the groups sufficiently representative to indicate closely the position of farms of similar type and in similar situations to those here defined. It is however advisable to consider the results only as a broad indication of the state of agriculture in large areas or in the country as a whole.

(1) In 1933-34, there is a change in the grouping of the farms of the North-east area as compared with the previous years. In this region 110 farms were under record as against 76 in 1932-33, and among the farms feeding and rearing live stock there were a number on which the receipts from sheep rearing were only slightly less important than those from the rearing and sale of cattle. Such farms were very large and sufficiently numerous, and also similar, to be grouped apart. This regrouping, taking also size of farms into account, has resulted in six new groups of the North-east area, and it has proved necessary to remove these groups from the Table and to place them at the foot, as not comparable with the groups of the previous years.

The data here given will have value only in so far as significance is attached rather to their general effect and weight given to the comparison they afford between one type of farming and another and between one period and another. In short the data should be utilised not so much as *absolute values* but as *relations*.

During the year 1932-33, the Government measures for the assistance of British agriculture were numerous and varied in scope. Three types became effective during the period: the imposition of import duties, regulation of imported supplies, commodity marketing schemes. The Import Duties Act which came into force in March 1932 imposed a 10 per cent. ad valorem duty on all imports into the United Kingdom, exemption being allowed in the case of (a) certain commodities included on a free list, and (b) Empire products. In April 1932 increases in the duties up to 20 per cent. were imposed on certain of the imports, but subsequently in June reductions to 15 per cent. were made. The quantitative regulation of imports into the United Kingdom, under the Ottawa Agreements, and affecting imports of chilled and frozen beef, frozen mutton and lamb, bacon and hams, came into force only at the beginning of 1933.

The fact was that at the end of 1932 the wholesale prices of meat and of beef in particular were continuing to fall, and the Government attempted to relieve the market by concluding agreements with the Dominions and foreign governments, with the object of an immediate reduction of the volume of imports.

By the terms of the Wheat Act of 12 March 1932, the farmers receive for their wheat deficiency payments designed to meet the difference between the average market price and a standard price of 10s. a cwt. The average market price in that year being 5s 4.46d. per cwt., the farmers received 4s. 5.25d. per cwt. as compensation. The total deficiency payments received by the farmers of the United Kingdom in 1932 amounted to approximately 4,500,000 pounds sterling.

In 1933-34, amendments were made in the law on import duties; quantitative regulation of imports was continued, in part by order and in part by agreement; the Wheat Act remained in force. In this year the ascertained average price of wheat was 4s 7.63d. while the deficiency payment was 4s. 10.3d. Total payments to farmers in the United Kingdom in 1933-34 amounted to some £7,180,000 (1).

In 1932-33 and in 1933-34, certain factors tended somewhat to neutralise the effect of the imposition of tariffs; such were for instance the payment of export bounties by exporting countries, and fluctuation of exchange rates.

A number of changes have taken place in the distribution of the cultivated area, and in the numbers of cattle, sheep and pigs.

In 1932-33 farmers in the North-East reduced the area utilised for arable cropping in order to lay down permanent grass. In the Eastern area on the

(1) For more detailed information, see the volumes for 1931-32, 1932-33 and 1933-34 of "The Agricultural Situation," published by the International Institute of Agriculture, Rome.

other hand there was a slight expansion of the arable acreage. In the Border area arable acreage was virtually the same as in 1931-32.

In 1932-33 the yields of cereals, root crops and hay were for the most part higher than those of 1931 and than the normal yields. The weather conditions were on the whole satisfactory. On the other hand in the North-east there were lower yields in turnips due to a reduced acreage sown, while an increased acreage was cut for hay to compensate for smaller yields of hay per acre. In the East the yields of all crops were above those of 1931-32, and the same is true of the Border area. The increased yields balanced, in the East, the reduction of the acreages of wheat, barley and turnips; and in the Border area, the decline in the acreage of wheat and barley. In the South-west area some reduction in supplies of hay followed from lower hay yields with approximately unchanged acreage mown.

The tendency towards increasing numbers of flock ewes apparent in previous years, was less pronounced in 1932-33, some small increase appearing only in the North-east and in the South-west areas. As regards herd cows no clear tendency can be observed. In most groups the numbers of live stock sold were smaller in 1932-33 than in the previous year. This is especially marked in the case of the Border sheeprearing and feeding farms (Group 10). The increase in the sales of cattle of the cheese-farms (Group 12) was considerable, and probably related to the increased size of farms and of herds. Larger numbers of sheep were sold in the North-east and South-west areas where, as stated, there was some increase in flocks, and in particular of the farms of Groups 2 and 11.

In 1933-34 no material change was to be noted as occurring in the total area under crops; certain changes however occurred in the utilisation of the cropped area. The wheat acreage in the North-east, although still relatively of small importance, was two or three times greater than in 1932-33. In the Eastern area the wheat acreage was roughly one third greater, and in the Border area it was doubled. The acreage of the most important crop in the North-east area, oats, showed little change, but in the East and Border areas there was some decline to the advantage of wheat.

In the Eastern and Border areas the yield of cereals was in general somewhat higher than in 1932-33. In the North-east, the yield of oats was a little below that of the previous year. The yield of potatoes was appreciably less than in 1932-33 in the Eastern and North-east areas, and about the same in the Border area. In all the regions there was a reduction in the yields of the root crops and of hay.

On the large cattle-rearing and feeding farms in the North-east the average size of the herd is seen to have been reduced by one fifth, while the size of the herd on the cattle and sheep farms and on the dairy farms was slightly larger. Numbers of herd cows and bulls on the arable-stock farms of the Eastern area also show an increase. The dairy farms of the South-west show no change. Stock sales of the farms of the Eastern area show increases, and those of the lowland farms of the Border (Group II) show reductions. In the North-east and East, pig sales were larger than in 1932-33.

In Table II, the most important financial results are shown, and a brief comment may be added.

TABLE I. — *Area Cultivated and Products Sold by the Scottish*

Group		Number of farms	Average area in acres	Products Sold		
				Wheat	Barley	Oats
NORTH-EAST AREA:						
1. Cattle-feeding farms with ewes	1931-32	18	356.4	0.4	1.6	19.
	1932-33	22	468.3	0.6	0.5	17.
2. Cattle-feeding farms without ewes	1931-32	5	242.3	—	—	34.
	1932-33	8	244.2	1.1	3.3	31.
3. Cattle-rearing and feeding farms with ewes	1931-32	27	253.0	0.4	2.5	17.
	1932-33	23	252.4	0.3	1.8	17.
4. Cattle-rearing and feeding farms without ewes	1931-32	16	114.5	—	4.4	24.
	1932-33	10	107.5	—	1.8	25.
5. Dairy farms	1931-32	6	209.0	—	2.1	23.
	1932-33	14	170.9	—	2.3	25.
	1933-34	25	201.8	1.5	0.5	23.
EASTERN AREA:						
6. Suburban farms	1931-32	5	293.5	15.8	1.2	24.
	1932-33	3	304.5	15.8	0.5	28.
	1933-34	3	303.7	21.8	1.0	23.
7. Cropping farms	1931-32	16	355.3	9.8	13.7	12.
	1932-33	19	336.4	8.9	10.5	10.
	1933-34	16	348.5	12.3	11.2	13.
8. Arable-stock farms	1931-32	6	432.0	4.7	5.8	10.
	1932-33	8	322.2	4.4	1.5	15.
	1933-34	16	373.0	6.7	1.4	10.
BORDER AREA:						
9. Sheep-rearing farms	1931-32	6	935.7	0.1	0.1	9.
	1932-33	9	892.0	0.2	1.0	9.
	1933-34	9	867.9	0.6	1.2	9.
10. Sheep-rearing and feeding farms	1931-32	13	483.4	2.6	8.2	12.
	1932-33	14	447.1	2.1	5.8	10.
	1933-34	10	575.7	3.5	4.8	12.
11. Lowland sheep-rearing and feeding farms.	1931-32	4	358.0	2.6	10.3	16.
	1932-33	6	393.3	3.4	7.5	20.
	1933-34	8	456.0	7.2	7.8	13.
SOUTH-WEST AREA:						
12. Cheese farms	1931-32	9	301.6	—	—	14.
	1932-33	14	503.0	—	—	15.
	1933-34	6	305.7	0.1	—	15.
13. Semi-urban dairy farms	1931-32	21	157.4	1.2	—	15.
	1932-33	26	171.5	2.1	—	14.
	1933-34	20	186.9	2.2	—	13.
14. General milk-selling farms	1931-32	24	176.7	0.4	—	13.
	1932-33	19	256.2	0.3	—	7.
	1933-34	26	162.3	0.9	—	12.
15. Cattle farms	1932-33	11	219.8	2.7	—	14.
	1933-34	14	248.6	2.3	—	10.

(1) See the note at the bottom of the first page of this article.

Farms that Keep Accounts, in 1931-32, 1932-33, and 1933-34 (I).

Cultivated, as percentage							Products sold					
Pota- toes	Turnips	Total crops	Artifi- cially sown grasses	Perma- nent mead- ows	Pasture	Total	Cattle head	Sheep head	Cattle head	Milk gallons	Wheat cwt.	Oats cwt.
3.0	9.9	34.5	47.3	6.8	11.4	100	82.3	383.1	30.6	—	—	724.2
2.8	7.9	29.6	39.2	8.4	22.8	100	89.5	423.8	39.2	—	—	1,105.0
5.4	15.1	55.3	42.0	1.2	1.5	100	61.4	0.4	22.0	—	—	819.7
3.7	13.7	53.1	38.1	6.1	2.7	100	59.5	187.5	32.8	—	—	896.1
1.2	10.4	32.4	42.4	11.8	13.4	100	32.3	221.0	26.2	—	—	—
1.5	9.3	30.4	40.1	13.8	15.7	100	30.3	267.4	28.4	—	—	—
1.2	12.8	43.2	43.8	3.8	9.2	100	20.3	43.4	7.0	—	—	—
1.3	12.2	40.8	43.4	0.3	15.5	100	17.6	12.8	9.6	—	—	—
1.2	12.4	39.5	56.5	4.0	—	100	44.2	93.3	36.8	—	—	246.2
2.3	12.8	42.5	55.0	2.1	0.4	100	42.3	95.1	20.4	—	—	—
2.2	12.0	40.0	54.4	3.1	2.5	100	47.1	106.1	28.4	—	—	—
17.4	7.1	65.5	20.7	13.8	—	100	8.8	59.6	115.0	—	951.8	—
18.5	6.2	69.0	17.7	13.3	—	100	19.0	96.0	136.0	—	1,605.7	1,255.0
19.2	4.9	69.9	17.1	13.0	—	100	13.7	62.0	14.7	—	2,122.5	893.0
15.3	14.0	65.3	17.2	17.5	—	100	110.0	553.2	38.4	—	662.4	470.9
16.5	12.9	65.4	17.8	16.3	0.5	100	119.1	415.9	24.9	—	831.2	866.5
16.2	12.7	65.9	16.1	17.4	0.6	100	123.2	422.3	38.3	—	873.4	801.1
5.8	8.8	36.0	26.8	37.2	—	100	104.6	565.3	18.6	—	—	—
5.2	8.5	35.2	30.9	33.9	—	100	72.0	443.4	43.9	—	347.1	632.1
6.8	8.7	40.1	23.0	34.3	2.6	100	68.5	302.4	38.9	—	516.0	413.1
0.5	7.3	17.8	45.5	12.7	24.0	100	63.0	1,108.0	23.3	—	18.0	454.4
0.5	6.5	17.8	41.7	24.3	16.2	100	60.8	1,028.9	14.1	—	—	442.1
0.6	6.7	19.0	37.0	20.7	23.3	100	49.2	956.3	9.2	—	117.7	478.0
1.2	11.6	36.0	37.2	25.4	1.4	100	70.0	750.3	29.1	—	145.8	397.4
1.7	11.2	37.1	30.7	31.3	0.9	100	40.9	703.4	23.8	—	189.1	567.3
1.7	10.7	33.1	36.3	29.1	1.5	100	58.2	828.1	23.3	—	481.4	525.1
2.8	13.7	45.7	28.6	25.7	—	100	61.8	536.5	8.3	—	16.9	230.5
2.9	14.0	48.6	21.5	29.9	—	100	60.2	574.3	22.3	—	304.7	792.7
1.9	14.1	44.8	28.5	25.9	0.8	100	66.6	740.9	23.0	—	633.0	727.4
1.6	5.7	22.1	55.3	6.5	16.1	100	43.9	113.0	50.8	15,055	—	362.0
0.8	6.9	22.7	31.7	19.8	25.8	100	58.9	118.6	154.8	12,036	2.9	—
0.9	7.2	24.1	44.3	30.4	1.2	100	—	—	—	11,203	—	—
3.3	5.4	25.1	58.2	13.3	3.4	100	40.2	66.9	4.1	24,889	33.1	100.8
2.5	6.8	25.8	51.4	13.8	9.0	100	44.7	58.5	6.9	21,267	70.8	82.3
3.0	6.4	25.4	52.9	14.2	7.5	100	51.5	114.3	12.5	23,550	60.3	145.2
1.3	3.4	16.4	46.1	26.2	11.3	100	28.4	67.4	3.1	19,090	7.4	39.3
1.0	2.3	11.2	30.9	23.4	34.5	100	23.7	89.4	4.9	17,421	12.8	27.5
1.4	3.8	18.8	43.6	30.9	6.7	100	27.8	80.3	4.7	17,815	—	—
2.6	5.0	24.5	47.3	19.9	8.3	100	42.1	121.3	1.8	—	75.1	125.7
1.6	4.6	19.2	17.7	25.3	17.8	100	47.7	148.4	—	—	92.0	114.7

Group		Number of farms	Average area in acres	Area		
				Wheat	Barley	Oats
1-a. Cattle-feeding farms, small and medium.	1933-34	13	187.5	0.5	1.4	26.3
2-a. Cattle-feeding farms, large	1933-34	11	360.7	2.1	4.2	26.9
3-a. Cattle-rearing and feeding farms, small .	1933-34	16	116.9	—	0.5	23.7
4-a. Cattle-rearing and feeding farms, medium.	1933-34	13	197.8	—	2.0	25.0
5. Cattle-rearing and feeding farms, large. .	1933-34	9	368.2	1.7	2.1	15.9
6. Cattle and sheep farms	1933-34	11	666.2	1.7	0.4	9.3

A. — FINANCIAL RESULTS IN 1932-33.

1. — THE GROSS RETURN.

The first noticeable fact is that the highest gross returns (amounting to between £2,000 and £3,000 per farm are found on the farms of the East and the Border, and that the cheese farms of the South-west (Group 12) show returns of similar magnitude.

In the Border area farms the average gross return was higher in 1932-33 than in 1931-32. The marked increase in that of the cheese farms of the South-west (Group 12) may largely be explained by the larger size of farm in 1932-33. A slight increase was apparent in the gross return of the cattle feeding farms with ewes in the North-east (Group 1); all other groups show declines, more particularly pronounced in the East.

Cattle rearing and feeding showed a general tendency in 1932-33 to give lower returns than in the previous year. This was also true of dairying for those farms where sales of dairy products form a large part of the total receipts. The returns from sheep, pigs and poultry were generally higher in 1932-33 than in the previous year, but on farms where this form of production is important, the returns from crops was on the other hand markedly lower than in the previous year.

The index number of wheat prices fell by five points from 1931-32 to 1932-33, but as a result of the Wheat Act and of the deficiency payments already mentioned, farmers received in 1932-33 a price higher by from 1s. 6d. to 3s. 6d. than the 1931-32 price. The index number of barley prices fell by nine points; farmers obtained a price of 6d. to 1s. less than of the previous year. The fall of oats prices was still more pronounced; the very large potato crop brought about a collapse in prices, which fell from £6 or £7 per ton in 1931-32 to £2 in 1932-33.

The fall of prices was less noticeable on the live stock and animal products market: some prices, those of store sheep, bacon pigs, milk and wool, even showed an increase. Declines of price occurred especially for fat and store cattle, cheese and butter. Cattle prices were lower by £2 to £5 per head in

cultivated, as percentage							Products sold					
Pota- toes	Turnips	Total crops	Artifi- cially sown grasses	Perma- nent mead- ows	Pasture	Total	Cattle head	Sheep head	Cattle head	Milk gallons	Wheat cwt.	Oats cwt.
1.4	12.0	41.6	53.6	4.1	0.7	100	51.9	122.4	26.4	—	—	408.5
3.7	12.4	49.3	47.2	2.2	1.3	100	109.2	208.0	44.1	—	—	1,489.1
0.9	10.6	35.7	45.9	4.2	13.2	100	14.2	86.8	8.1	—	—	191.9
1.3	11.6	39.9	40.5	8.6	11.0	100	28.9	103.2	41.0	—	—	311.8
2.4	9.2	31.3	36.3	15.2	17.2	100	43.1	344.0	78.7	—	—	325.8
1.3	5.1	17.8	31.4	8.8	42.0	100	61.3	615.2	32.3	—	53.6	658.9

all groups except the semi-urban dairy farms in the South-west (Group 13). Sheep prices were lower in all groups except the cheese farms and the semi-urban dairy farms (Groups 12 and 13).

2. — FARMING EXPENSES.

The net expenditure varied between the different groups in direct relation to the volume of production; it was heaviest in the Eastern and Border areas. Compared with 1931-32 there was a general tendency to reduction of expenditure in 1932-33. The groups recording an increase are Groups 1, 2, 11 and 12, such increase being largely attributable to the increased size of the farms in these groups.

3. — THE NET RETURN.

The recorded returns for 1931-32 have shown some slight improvement as compared with 1930-31. The data for 1932-33 however show that this improvement was of a transitory nature and that the year 1932-33 was one of increasing difficulty for Scottish farmers.

Changes in the situation were not uniform in all areas. The most serious decline in the returns occurred in the farms of the Eastern area, especially on the farms of Groups 6 and 7. On the other hand the position of the Border farms was somewhat improved as compared with the previous year. In the South-west, the returns were more satisfactory than elsewhere; in the North-east four out of the five groups showed considerably reduced returns while the farms in the remaining group (Group 3) showed a smaller average loss.

It is clear that conditions in 1932-33 were peculiarly unfavourable to cropping farms (Groups 6 and 7). On the other hand, the returns to dairy farms were well maintained, especially in the South-west.

In conclusion it may be said that:

(a) the decline in turnover in the cropping farms was largely due to the disastrous fall in the price of potatoes consequent on the unusually heavy crop. In certain cases the decline in receipts from potatoes was enough to account for the whole of the decline in profits.

TABLE 2. — *Gross Return, Farming Expenses*

Group		Gross			
		Stock-breeding for slaughter and miscellaneous	Milk and dairy products	Pigs	Other animals
		1	2	3	4
NORTH-EAST AREA:					
1. Cattle-feeding farms with ewes	1931-32	693	7	101	237
	1932-33	625	47	146	321
2. Cattle-feeding farms without ewes	1931-32	537	5	287	22
	1932-33	386	12	314	116
3. Cattle-rearing and feeding farms with ewes . . .	1931-32	371	78	83	132
	1932-33	323	24	118	219
4. Cattle-rearing and feeding farms without ewes. . .	1931-32	249	11	67	28
	1932-33	186	20	99	6
5. Dairy farms	1931-32	—	1,549	118	93
	1932-33	—	1,181	90	66
	1933-34	—	1,181	137	131
EASTERN AREA:					
6. Suburban farms	1931-32	73	8	93	36
	1932-33	106	2	139	111
	1933-34	96	11	172	83
7. Cropping farms	1931-32	901	23	32	183
	1932-33	636	20	38	380
	1933-34	753	9	86	447
8. Arable-stock farms	1931-32	855	7	83	439
	1932-33	476	38	117	406
	1933-34	518	65	176	459
BORDER AREA:					
9. Sheep-rearing farms	1931-32	547	53	48	805
	1932-33	372	119	34	1,184
	1933-34	441	99	159	1,319
10. Sheep-rearing and feeding farms	1931-32	677	62	124	704
	1932-33	452	22	187	914
	1933-34	510	66	153	1,187
11. Lowland sheep-rearing and feeding farms	1931-32	594	44	38	441
	1932-33	492	42	106	681
	1933-34	567	5	97	1,108
SOUTH-WEST AREA:					
12. Cheese farms	1931-32	168	1,149	324	112
	1932-33	203	1,634	598	150
	1933-34	244	1,354	588	284
13. Semi-urban dairy farms	1931-32	63	1,306	122	38
	1932-33	90	1,080	125	47
	1933-34	168	1,136	118	85
14. General milk-selling farms	1931-32	126	864	220	49
	1932-33	133	711	192	68
	1933-34	197	802	112	74
15. Cattle farms.	1932-33	294	2	71	106
	1933-34	397	24	88	161

and Net Return in Pounds Sterling per Farm (1).

return			Farming Expenses								Net return (7 — 14)
Vegetable production	Other branches	Total	Labour	Fertilisers	Seeds and fodder	Taxes	Other expenses	Repairs, depreci- ation	Total		
5	6	7	8	9	10	11	12	13	14	15	
572.5	131.5	1,742	531	152.4	294.1	8.0	266.5	92.0	1,344	398	
513	106.0	1,758	606	126.1	312.4	9.0	272.6	102.9	1,429	329	
753.4	81.6	1,686	484	133.3	195.2	4.4	276.7	83.4	1,177	509	
492	126.0	1,446	530	97.4	242.4	6.9	250.5	108.8	1,236	210	
178.9	125.1	968	407	59.9	187.2	6.0	243.1	71.8	975	—	
175.8	86.2	946	381	58.9	163.1	5.8	160.1	61.1	830	116	
113.9	79.1	548	199	27.4	96.4	2.3	46.1	41.8	413	135	
75.2	7.8	394	176	29.1	67.0	1.9	71.3	26.7	372	22	
189	138.0	2,087	586	75.6	417.7	2.8	368.8	122.1	1,573	514	
206.1	78.9	1,622	423	67.5	338.2	5.0	410.7	113.6	1,358	264	
246.1	123.9	1,819	441	76.5	372.7	5.5	306.2	101.1	1,303	516	
3,299.2	403.8	3,913	1,136	486.1	318.5	55.4	370.4	207.6	2,574	1,339	
1,949	365.0	2,672	1,078	439.9	152.5	39.7	348.0	131.9	2,190	482	
2,429.3	443.7	3,235	1,018	387.4	254.3	36.0	340.5	228.8	2,265	970	
3,444	217.0	4,800	1,608	525.3	891.7	24.0	353.2	301.8	3,704	1,096	
1,994.3	124.7	3,193	1,379	363.2	559.7	25.6	441.7	257.8	3,027	166	
2,173.6	439.4	3,908	1,348	391.1	701.8	23.2	412.8	261.1	3,138	770	
1,361.2	187.8	2,933	1,061	275.0	754.2	17.4	252.5	226.9	2,587	346	
579.1	104.9	1,721	640	136.4	461.3	8.9	269.9	134.5	1,651	70	
658.5	287.5	2,164	650	182.8	511.3	11.2	247.7	168.0	1,771	393	
382	106.0	1,941	983	171.8	577.3	17.4	336.3	150.2	2,236	—	
265.8	111.2	2,086	866	133.2	414.0	15.2	244.2	134.4	1,807	276	
368.9	135.1	2,532	796	111.5	632.1	17.1	338.5	167.8	2,063	466	
477.3	161.7	2,266	1,019	135.7	875.1	19.5	287.0	217.7	2,554	—	
508.8	121.2	2,205	871	121.3	502.3	16.4	292.6	153.4	1,957	248	
811.3	153.7	2,881	924	162.5	675.1	20.7	267.8	163.9	2,214	667	
708.6	112.4	1,938	823	100.5	599.0	18.5	216.9	103.1	1,861	77	
711.8	40.2	2,073	869	174.7	560.4	14.9	305.2	151.8	2,076	—	
783.6	79.4	2,640	907	148.4	719.6	17.6	355.0	179.4	2,327	313	
156.3	112.7	2,022	528	133.3	560.3	9.5	250.6	96.3	1,578	444	
190.5	90.5	2,866	946	164.8	746.9	14.1	263.7	157.5	2,293	573	
184.4	53.6	2,708	671	115.4	822.7	12.9	253.4	117.6	1,993	715	
151.7	106.3	1,787	409	98.0	524.2	10.9	164.5	90.4	1,297	490	
106.5	158.5	1,607	387	80.2	389.8	9.4	179.7	68.9	1,115	492	
182.0	269.0	1,958	385	95.8	492.9	10.2	174.5	72.6	1,231	727	
49.5	90.5	1,399	336	75.0	429.4	7.6	138.1	65.9	1,052	347	
42.9	88.1	1,235	320	57.1	399.0	7.7	140.6	55.6	980	255	
79.2	82.8	1,347	296	61.8	367.8	7.6	121.0	50.8	905	442	
202.3	211.7	887	277	89.8	151.5	6.0	135.2	62.5	722	165	
209.4	224.6	1,104	262	81.2	162.3	5.7	79.6	47.2	638	466	

(1) See note at the bottom of the first page of this article.

Group		Gross			
		Stock-breeding for slaughter and miscellaneous	Milk and dairy products	Pigs	Other animals
		1	2	3	4
1-a. Cattle-feeding farms, small and medium	1933-34	378	5	170	149
2-a. Cattle-feeding farms, large	1933-34	738	15	156	225
3-a. Cattle-rearing and feeding farms, small	1933-34	173	22	74	81
4-a. Cattle-rearing and feeding farms, medium	1933-34	327	25	174	110
5. Cattle-rearing and feeding farms, large.	1933-34	512	22	278	363
6. Cattle and sheep farms.	1933-34	367	13	151	707

(b) The relative improvement in the profitableness on the Border sheep rearing farms as compared with 1931-32 was due to the fact that the breeders in the earlier year had revalued their flocks at prevailing prices so that an abnormally heavy loss had been recorded in 1931-32.

(c) As cattle prices continued to decline, difficulties increased for farmers in the North-east area. The relatively small size of the farms, while limiting profits in good years, also has the effect of limiting losses which may result from price declines.

(d) In years of crisis, the dairy farmers are in a relatively favoured position. This is because of the sheltered character of the market for liquid milk. In addition the lag between receipts and expenditure is relatively short in dairy farming. With respect to the cheese farms, the decline in the price of cheese might have been expected to result in a greater decline in profits than the figures indicate. The general averages of 1931-32 and of 1932-33 are not strictly comparable, from the fact that the groups include dissimilar farms, but so far as can be judged from the data it would seem that the net return was maintained in 1932-33. If the number of farms grouped under 12 had been greater, the result would have been different.

(e) In spite of the various measures taken by the Government, the general effect of the depression in 1932-33 was to render the situation of Scottish farmers more difficult.

B. — THE FINANCIAL RESULTS IN 1933-34.

I. — THE GROSS RETURN.

The highest gross returns were obtained in the East, where a level of between £3,000 and £4,000 per farm was reached; the lowest on the cattle rearing and feeding farms in the North-east. Returns are also high on the cheese farms of the South-west and on the arable-stock farms of the Border.

return			Farming Expenses							Net return (7 — 14)
Vegetable production	Other branches	Total	Labour	Fertilisers	Seeds and fodder	Taxes	Other expenses	Repairs, depreciation	Total	
5	6	7	8	9	10	11	12	13	14	
169.6	63.4	935	290	52.7	146.2	3.8	109.6	33.7	636	299
649.8	109.2	1,893	610	140.8	286.3	10.8	265.9	97.2	1,411	482
51.1	29.9	431	124	20.7	64.6	1.8	49.5	16.4	277	154
132.8	93.2	862	294	58.9	174.6	4.1	49.9	43.5	625	237
258.7	188.3	1,622	552	91.2	291.6	14.0	192.9	104.3	1,246	376
272.5	106.5	1,677	464	92.0	264.0	7.8	286.0	68.2	1,182	495

In the North-east there is a similarity between the groups of cattle feeding farms and the cattle feeding and rearing farms. Only the branches of less importance, pig breeding, poultry, egg production, crop production, differ somewhat from one group to another.

The suburban farms of the Eastern area showed a gross return appreciably higher than in 1932-33; the group comprised the same few farms in the two years. The rise in gross return is essentially due to the increase in crop receipts.

In the South-west area the gross return for each group is higher than in 1932-33, except in the case of the cheese farms.

Prices, in 1933-34, were in general tending upwards again. Wheat prices fell, but acreage under wheat increased as a result of the encouragement given by the deficiency payments. Barley prices were decidedly better, as much as 2s. more per cwt. being obtained, reflected in the results of farms of the East and the Border. Oat prices remained at a low level; the production of oats tended to be reduced in favour of other crops. The prices of store cattle fell more appreciably than fat cattle prices. Farmers rearing and selling store cattle did worse than in 1932-33; those buying to feed and sell fat did better.

Prices of fat and store sheep and of wool improved, and farmers in the Border area profited thereby to some extent. Pig prices were appreciably better in 1933-34 giving improved returns to farmers in the North-east and Eastern areas. Milk prices also were higher than in the previous year; on the other hand cheese prices were lower.

It has to be remembered that any rise in prices is due in part to the measures taken by the Government, and in particular to the imposition of import duties and to the regulation of imports by quota and by gentlemen's agreements. It would be difficult to say in what proportion these factors have contributed to improve the situation.

TABLE 3. — *Index-numbers in 1931-32, 1932-33 and 1933-34 of the Principal Agricultural Products and of Agricultural Requisites.*

Commodity	Crop year (September to August)		
	1931-32	1932-33	1933-34
General agricultural produce	114	106	113
Wheat	79	74	63
Barley	101	92	112
Oats	101	82	82
Potatoes	230	108	107
Hay	73	67	82
Fruit	132	178	142
Vegetables	158	130	163
Fat cattle	118	103	100
Store cattle (1)	117	100	88
Fat sheep	110	103	120
Store sheep (2)	78	84	110
Bacon pigs	92	96	112
Pork pigs	102	102	120
Poultry	133	127	121
Eggs	110	107	103
Milk	139	147	161
Cheese	124	114	107
Butter	106	94	91
Wool	45	66	80
Feeding-stuffs	94	88	84
Fertilisers	90	89	90
Labour (3)	178	166	163

(1) Calculated from index-numbers for September to November and April to June inclusive. —

(2) Calculated from index-numbers for August to October, inclusive, of the later year. — (3) 1914 = 100.

2. — FARMING EXPENSES.

Farming expenses increased decidedly on the cropping farms of the East, on the suburban farms of the East and on the Border lowland farms.

3. — THE NET RETURN.

The lowest net return, in the North-east, was obtained by the small farms rearing and feeding cattle; the highest by the dairy farms.

In the East, the Border and the South-west, the net returns were higher than those of 1932-33. The position of the arable-stock farms of the East was, however, to quote the Report itself, very unsatisfactory. In the Border area, the variation in individual farm results was so great that average values indicated little.

The number of the cheese farms taken as sample in the South-west was too small and the variation in their individual results was too wide for the average net return to give an exact idea of the situation of these farms as a whole. The semi-urban dairy farms of the South-west were in the most favourable position, as their average net return was high and in no case was a loss recorded.

As the composition of the groups of farms under survey varies considerably from year to year, it is of advantage to examine the results as obtained only on those farms providing accounts for two consecutive years.

Such an examination does not lead to any change in the conclusions already reached, but gives a somewhat clearer idea of the variations in profitability. Whereas in 1932-33 some 53 per cent. of the farms providing two years' records showed lower net returns than in 1931-32 and only 47 per cent. showed higher returns, of those surveyed similarly in 1933-34 the percentage of those obtaining better results than in 1932-33 was 86.

By way of conclusion it may be said:

(a) In the North-east, the improvement in the position of dairy farming came about prior to the introduction of a marketing scheme. In the South-west the improvement is to be attributed to the operations of the Scottish Milk Marketing Scheme.

(b) In the North-east, the returns are so far not commensurate to the efforts made to develop cattle rearing.

(c) In the East, the improvement in incomes was due to increased returns from crops and in a much smaller measure to better returns on sheep. On the arable-stock farms, however, less profit was drawn than in 1932-33 from sheep. The deficiency payments made under the Wheat Act were of great assistance to farmers.

(d) In the Border area, the improvement in the position of farming was due to larger returns from crops together with some improvement in returns from sheep. Deficiency payments for wheat were also of assistance here, although to a less degree.

(e) The profitability of the farms on which accountancy results have been ascertained is better in 1933-34 than in 1932-33. It would appear that the lowest point of the curve has been reached and that the situation is recovering. At the same time the position of the farms not mainly engaged in milk production is still far from satisfactory.

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PROTECTION OF AGRICULTURAL PRODUCTION AND OF THE EXPORT OF AGRICULTURAL PRODUCTS IN SOME SOUTH AMERICAN COUNTRIES: RESULTS OF THIS POLICY

SUMMARY: *Argentine Republic*: The National Plan of Economic Action, its principal legal manifestations and its results. — *Brazil*: Coffee-growing and the new direction given to agricultural production. — *Uruguay*: Action taken by the State in the last two years for the defence of agriculture.

The protectionist policy instituted within the last few years in the importing countries in view of meeting and overcoming the difficulties originating in the crisis which began to be felt in 1929 has had its least favourable effects in the countries the economy of which is based on arable farming and stock-breeding.

Accordingly it will not be without interest to enquire into the manner in which three countries markedly agricultural in character, the Argentine Republic, the United States of Brazil and the Republic of Uruguay, have endeavoured first to protect their crop and live stock production and secondly to maintain a prosperous exportation.

I. — THE ARGENTINE REPUBLIC.

The series of legal measures beginning with the Plan of Economic Policy place the *Argentine Republic* in the first rank among the countries which have played their part with most signal success in the struggle against the consequences of the world crisis. After the years 1927 and 1928 during which this country passed through a period of prosperity, in 1929 there set in a phase of depression due to a number of causes, among them as affecting external trade the fall in prices of crop and livestock products, and acting internally the collapse of the public finances. During 1929 the failure of the New York Stock Exchange brought about a general fall in values which resulted, in Argentina, in the withdrawal of considerable capital. At that time the mechanism of conversion was still in working order, there were no obstacles to prevent the exodus of gold and in a few weeks this exodus has amounted to more than 200,000,000 pesos. With a view to stopping this drainage and to checking the fall of the paper peso, the closure of the Conversion Bank was decreed. The consequence of this was that the sums in circulation were no longer regulated by the actual incoming and outgoing of specie, and that the economy of the country took its natural course and was exposed to all the untoward circumstances that may affect a country without reserves and having a somewhat unstable agricultural economy. On the other hand it was observed that the public expenditure was constantly going up, that the Treasury payments were in arrears, that the public debt was increasing, and that all these factors contributed to a growing deficit in the national budget. At the same time the existence of the world crisis became clearly evident together with the decline in the prices of crop and live stock products which represent the total of the Argentine exports.

Argentina is a debtor country and thus requires every year a certain quantity of money from abroad to provide for the payment of the interest on its foreign debt, for the payment of the interest on foreign capital invested in national undertakings, and for other services. The only practicable method of obtaining the money needed in Argentina for these services is that of endeavouring to secure by every means an export surplus so as to render the favourable trade balance as large as possible, especially at a time when the conditions of the world money market prevent the influx of new capital. It is for this reason that the Argentine Republic has made provision for the improvement and regulation of its crop and live stock production, the sole source of its national wealth, and for the protection of the export of agricultural products so as ensure the availability in the country of such sums in specie as are indispensable for the maintenance of the prosperity of its economic life. Such was the objective which determined the whole course of the legislative enactments which began with the Plan of Economic Policy and were completed by the establishment of a series of organisations or representative vocational councils dealing with the entire crop and animal production of the country. These organisations are: the National Meat Council, the Council for Regulation of Wines, the Commission of Control of the Production of and trade in Mate, the National Grain and Grain Elevators Commission, National Sugar Commission, Textile Fibres Commission, Council of Regulation of the Dairying Industry, National Oil Commission, Foodstuffs Commission and the National Cotton Council.

The first step towards financial restoration was taken by a reduction in the expenditure as shown on the national budget and by increased strictness in the imposition of taxes; it was on this basis, which was clearly the one to adopt in view of the imperative necessity of safeguarding the national credit, that the economic plan of protection was established. The first manifestation of this plan was the *conversion of the bonds of the internal debt*, the object of which was merely to reduce the pressure of the fixed charges on the country, not by repudiation of engagements but by their maintenance while at the same time fulfilling the duty of reducing the public expenses. This policy of reduction of the interest charges by conversion benefited the great mass of the debtors to the Banks as well as very many growers whose trading interests were dislocated by the fall in prices. The conversion was primarily designed to benefit the working population. The reduced rate of interest was fixed at 5 per cent., as being the rate best corresponding to the situation of the financial market.

The Decree of Conversion of these bonds of the internal Debt (No. 31,131) was passed on 11 November 1933. The text establishing the rate of interest of the new bonds reads as follows: "The National Public Credit will proceed to the exchange of all bonds or notes issued by the Government of the Nation, now in circulation at 5 1/2 and at 6 per cent. of interest, against issue of bonds of different series, issue in paper pesos which will bear the denomination Internal Argentine Credit (*Credito Argentino Interno*) at 5 per cent. of interest and one per cent. of annual cumulative amortisation, obtainable by purchase or by bidding at auction when they are quoted below par, and by drawing when they are at par or above par; there will also be issued the Patriotic Loan (*Emprestio*,

Patriotico) at 5 per cent. interest and one per cent. cumulative amortisation by drawing at par."

The bonds of the Debt undergoing conversion represented in round numbers 95 per cent. of the total of the issue, while 5 per cent. at most were redeemed; in other words it may be said that out of 1,600,000,000 of paper pesos in circulation, 1,500,000,000 were converted into new bonds at reduced interest.

At the same time as this Decree of conversion of bonds the Government published a second decree (No. 31,797 of 14 November 1933) in virtue of which the *mortgage debentures of the Mortgage Bank of Argentina* were submitted to conversion. This new conversion had a direct influence on Argentine agriculture since the larger proportion of the operations effected by the Mortgage Bank related to agriculture. The object of the new operation was to favour the rural grower, who, since the rate of interest was lowered on the new bonds would need to pay less to the Bank for its mortgage services. The conversion of these debentures is effected in the same conditions as those of the bonds already mentioned, *viz.* with a reduction of from 6 to 5 per cent.

The advantages of the two conversions for agriculture have been great; the reduction of the interest by one per cent. and the extension of the date of expiry, which was again extended to 36 years, contributed to re-establish the equilibrium of economic life which had been so deeply affected by the world crisis. As a consequence of this crisis, growers and breeders had found themselves forced to pay for costs of borrowing three times more than before the crisis, while thanks to the decree of conversion and to other measures payment for these services was gradually reduced and approaching a normal level. In addition, the State, by the conversion of the bonds, and the Mortgage Bank by the exchange of its debentures, have at disposal funds enabling the Government on the one hand to realise with increasing effectiveness the policy of protection of agricultural production and exportation, while the conversion provided the Bank with more ample funds to distribute among growers thus securing with more certainty their attachment to the land.

Another of the measures that form part of the Plan of Economic Action of the Argentine Government is the *control of the exchanges* exercised with the object of influencing favourably the prices of crop and animal products. These prices are determined by those of the world market expressed in various monetary units, variable or invariable according as they are or are not based on the gold standard.

Taking into account the fact that Argentine economic life is mainly dependent on its trade with other countries, the measures just described, especially those relating to the control of exchanges, are directed towards the improvement of the agricultural situation by means of price raising, as well as that of the national export trade which, it may be repeated, is concerned exclusively with the products of arable farming and stockbreeding. Any fall in exports is at once reflected in an abrupt shrinkage of the volume of the internal economic activities of the nation. It is difficult to mention a single branch of the Argentine economic activities which is not perceptibly and directly affected by the vicissitudes of crop and animal production. For this reason, the fall in the value of agricul-

tural production and export difficulties in respect of the products are immediately reflected in the diminished purchasing power of the population as a whole. It is consequently of the first importance to protect this production and the export of the products.

This discussion has been confined to the objectives which the Argentine Government kept in view when issuing the Decrees as to conversion of the bonds of the debt and of the mortgage debentures, and in creating a new system of control of exchanges. Owing to the strictly financial character of the legal forms which regulate and underlie these measures, they necessarily fall outside the scope of this article. All that is attempted here is to outline the method adopted by the Government for protecting the crop and animal production and the export of products, and it is unnecessary to reproduce in detail the substance of the Decrees.

At the same time, in reference to the new system of control of exchanges, mention should be made of an element of profit of which the Public Treasury takes advantage so as to recoup itself for the higher cost of other services. The method of effecting this profit on the exchanges is as follows: the foreign currency resulting from the exports is negotiated by the official market; before making shipments, the exporters must sell to the banks at the price fixed by the Minister of Finance the bills of exchange held by them for the corresponding sums in foreign currency and must place them at the disposal of the Office of exchanges which sells them at the auction price obtained. The difference between the purchase price and the selling price constitutes the profit fund referred to above which is, among other uses, devoted to financing the operations of the Grain Regulation Council in the form of export premiums, the object being to ensure that the advantages of the devaluation of the Argentine peso shall take effect on the prices of wheat.

Mention may also be made of the favourable results of the Trade Convention concluded with Great Britain signed on 1 May 1933, which, as compensation for the reductions in the imports of Argentine meat into the United Kingdom, established a system of exchanges advantageous for the frozen credits by means of the issue of a loan earmarked for the purpose of liquidation of these, and also lowered the customs dues on certain commodities coming from Argentina, thereby establishing in this Convention a favourable treatment for the imports from Argentina of wheat, maize, linseed and wool, into England.

The general economic situation being thus cleared by means of the conversion measures and the level reached which would correspond to the national money and to the prices of the crop and animal products, the Government proceeded to the institution of Regulative Councils (*Juntas reguladoras*) with the function of watching over the interests of the producers of the two main sources of Argentine wealth, cereals and meat. Subsequently the activity of these organisations which are in reality representative vocational groupings of a corporative character, has been extended to all the various branches of Argentine farming, to the vine growing and wine making industries, to mate, sugar, milk and its derivatives, to textile fibres, to oil and latterly, by the establishment of a National Council, to a product of great future importance for Argentina, cotton. The State intervention in these organisations, which at times have merely advisory powers but

which at other times exercise wider powers of autonomy and command large resources of their own, simply means that the Government assumes the function of a new intermediary acting between producers, dealers and shippers of the different commodities in question, so as to avoid undue market fluctuations and to protect the national interests with fairness to all other.

As a sequel to this brief summary of the series of measures adopted by the Argentine Republic for the protection of its crop and animal production and of the resulting exports, it is desirable to examine, now that a period of three years of evident recovery has elapsed, the effects of these important modifications which were introduced into the economic life and the banking structure of the country, in other words to define the present position of Argentina in the campaign against the depression which since 1929 has affected the world economy.

The collapse of the world economy at the end of 1929 brought home to each country and in particular to the debtor countries the necessity for regulating their balances of payment without reckoning on foreign contributions. In Argentina the trade balance proved to be closed with a deficit amounting to a total of 284,500,000 of paper pesos. In view of such a situation, a policy of contraction of imports was entered upon whereby the situation was improved each year until in 1932 a favourable balance was achieved of 451,000,000 pesos, enabling the country to meet without anxiety the commitments which constituted its debt and to close its balance of payments without an adverse balance. This however is a result rather of the crisis affecting the country than of an official policy, and one achieved notwithstanding the higher tariffs. The truth of this appears from the fact that the improvement shown by the favourable figures of 1932 took the form of an increase in purchases from abroad at a moment when, although the volume of exports remained constant, their value was decreasing with the world fall in the prices of crop and live stock products, and moreover when the favourable balance of 223,700,000 of national money on the trade balance of 1933 was not enough to cover the requirements of the transfers abroad which the country was obliged to effect. This state of affairs persisted and at the end of 1933 the situation became so entangled that the Government was compelled to intervene with the result that in 1934 a favourable balance of 328,500,000 pesos and in 1935 one of 367,400,000 was obtained. It was by means of this last sum that Argentina effected a closure of its commitments abroad.

The figures relating to the external trade of Argentina from 1930 to 1935 are subjoined:

Argentine External Trade in Thousands of Paper Pesos.

	Exports	Imports	Balance
1930	1,679,962	1,395,690	— 284,272
1931	1,173,828	1,455,815	+ 281,987
1932	836,263	1,287,783	+ 451,520
1933	897,150	1,100,562	+ 203,412
1934	1,109,932	1,438,434	+ 328,501
1935	1,174,981	1,542,372	+ 367,391

From these figures the favourable result from the State intervention is clearly evident; as a matter of fact, during the financial year in which the plan of protection of the economy was initiated the trade balance closed with a favourable balance of 328,500,000 pesos and in 1935 with one of 367,390,000.

This favourable balance is characterised by the predominance of crop and live stock products in the exports; thus it appears that (1) in 1934 the increase as compared with the 1933 figures was 10.7 per cent. while in 1935 it was 17.1 per cent. Agricultural exports, properly so-called, of maize, linseed, rye, canary grass, cotton fibre, potatoes, fresh fruits in 1935 were larger by a volume of 100,000 tons and a value of 60,362,000 paper pesos than those of the preceding year, while the increase in the export of stockbreeding products was 63,000 tons for a value of 45,254,000 pesos. Shipments of wheat, rye and oats fell off in 1935 as compared with 1934, but the increase in the export of other agricultural products was so considerable that, on the whole, the fall in the former was largely compensated.

With a view to supplying a more exact picture of the present situation of production and exportation of the crop and live stock products of Argentina, as resulting from the measures of protection undertaken by the Government, a statement may be given of the trade in the two types of products in 1934 and in 1935.

The gradual recovery in respect of wheat of the former satisfactory position is due to the smaller harvests of the last two years resulting in an improved statistical position, to the repeated State intervention which had the effect of raising prices, and also to the standstill, it might almost be said the lowering, of the barriers established by the principal countries importing wheat. The decrease in production in 1935 was nearly 50 per cent. as compared with 1933 and 40 per cent. as compared with 1934; on the other hand prices went up, reaching their peak in December 1935, when the *Junta Reguladora de Granos* fixed a minimum price of 10 paper pesos per 100 kg. of wheat.

As regards maize it has already been remarked that the production and export of this cereal was so exceptional, during the two years under review, that the advantageous position of the trade balance was successfully maintained in spite of the poor results of the wheat harvest. This high production affected the prices, which began to fall, but by the action of the Government, exercised through the medium of the *Junta Reguladora*, a minimum price was fixed of 4.40 pesos per 100 kg. of maize. The average price reached by maize exceeded the fixed minimum rising to 4.77 pesos per 100 kg.; this price was lower than the average of 1934, 5.72 pesos, but higher than that of 1933 which was only 4.05 pesos. A lowering of the transport rates on maize formed another aspect of the Government policy of protection of agricultural production.

The importance of linseed in Argentine economy becomes evident from the following fact: 50 per cent. of the world production of linseed comes from

(1) All statistics have been supplied by the *Dirección General de Estadística* of the Argentine Government.

Argentina (this country produces on an average 1,280,000 tons out of a world production of 2,500,000 tons). The *Junta Reguladora* in December 1935 fixed as minimum price for this product of 14 pesos per 100 kg. The export of linseed is constantly on the increase.

An examination of the main characteristics of the live stock production and of the export of its products during the same years 1934 and 1935 makes evident that in this branch of farming, of such immense importance for Argentina, State action has taken the form of the institution of an autonomous body, the National Meat Council (*Junta nacional de carnes*) and the Argentine Breeders' Corporation, of more recent establishment.

From the time that the Corporation initiated its activity, the situation in respect of the meat export improved. For cattle, the price rise in 1935, after the Corporation began to function, was 10.34 per cent. per kg. of live weight as compared with 1934, and the number of head of cattle purchased by the meat packers for export increased by 5.97 per cent., while the total live weight of the animals purchased was increased by 2.97 per cent. For sheep, the slaughter of animals intended for export increased in 1935, the first year, as already stated, of the working of the Corporation. Prices showed a 9.01 per cent. rise per head as compared with 1934. In respect of pigmeat, which represents a new departure in Argentine breeding, purchases by the meat packers for export increase from year to year. Up to a fairly recent date, pigmeat was hardly exported at all, being almost entirely consumed within the country. The case is one therefore of the beginnings of a production and export; the prices and slaughtering numbers, none the less, are assuming an increasing importance each year.

With regard to wool, the increase in woollen manufacture in certain countries, especially in the United States, Great Britain and Germany, has been of material benefit to the wool trade of Argentina, in view of the favourable conditions prevailing in Argentina as compared with the other wool exporting countries. Since 1932 there has been a steady increase in the production of wool; the surplus stocks might have occasioned congestion on the market if it had not been for the stabilising effect of two factors: one of these was the flock mortality that occurred in 1934 in the south of the province of Buenos-Ayres, an important wool-producing zone, and the other, the increase in the demand for Argentine wool in the United States and in Germany. The fall in production due to the former cause and the marked diminution in stocks following on the increased demand had together the effect of stabilising the market the average of prices being maintained with little or no alteration. 95 per cent. of the Argentine wools are of the crossbred type; out of this percentage half are the coarser kinds. The average of the prices in pesos per 10 kg. during the last three year has been as follows:

Year	Price per 100 kg.
1933	6.00
1934	9.26
1935	8.20

For milk products there are no statistics available earlier than 1934, a fact which necessarily limits the scope of any appraisal of the actual progress achieved in this branch of stockbreeding since the initiation of the measures for the protection of agriculture taken by the Government.

Returning to the consideration of crop products, mention may be made of cotton which promises to have an important future in Argentina and seems likely to become a representative export commodity. The protection given by the Government to cotton growing through the medium of the National Cotton Council constituted one of the essential factors in its prosperity. During the last season, 1934-35 sowings took place over 286,147 hectares producing, according to the official statistics 238,285 tons of raw cotton, or 64,038 tons of fibre and 164,187 tons of cotton seed; in the previous season, 1933-34, the figures of the three products were 155,236 tons for raw cotton, and 43,357 and 106,833 respectively for fibre and seed. For production of fibre, Argentina holds the seventh place among the cotton growing countries. The extent to which the Government has protected prices and exports may be seen from the following figures relating to the Argentine exports of cotton products in the years 1934 and 1935.

Products	1934		1935	
	Volume exported (tons)	Value (pesos)	Volume exported (tons)	Value (pesos)
Fibre	27,112	20,417,451	36,329	27,479,435
Seed	316	83,686	16,353	948,909
Seed residues	2,368	138,714	3,312	199,270
Cakes	31,390	2,142,357	41,142	2,778,070
Cake residues	350	22,067	—	—
Oil	1	348	243	146,002
Flock	2	425	15	566
Total	—	22,805,058	—	31,546,262

It is thus seen that the increase in production has been accompanied by a highly satisfactory expansion of exports. The figures given above show that the total value in 1935 of the exports of the products of the cotton growing industry amounts to 31,546,262 pesos or as compared with the figure of 1934 an increase of 8,714,204 pesos, or 38 per cent.

After the export of cereals and of meat, the cotton export is the next largest.

State intervention was also undertaken in the interests of the vine growing and wine making industry with the object of mitigating the crisis from which this branch of agriculture was suffering. The measures taken by the Government for its protection were two in number: the unification of revenue charges and the establishment, by Law No. 12,137, of the Wine Regulating Council (*Junta Reguladora de Vinos*) with the function of making all suitable provision

for the regulation of wine making, for improving the quality of wines and of supervising the export. The Council grants loans to vine growers, relieves the market by purchase of surplus stocks and thereby establishes an average price level.

By means of the unification of revenue charges the excessive pressure of such charges on wines has been lightened, with the result that prices have become more advantageous.

These observations on the protection of crop and animal production and on the export of the products may be summarised by means of a table which clearly shows the beneficial effects of this intervention on the part of the State in favour of agriculture. The data refer to these three last years and correspond to the quantities exported and their values. The steady advance of these figures from one year to another affords the most striking proof of the beneficial results achieved by the policy of protection undertaken by the plan of 1934.

Products exported	Quantities exported (tons)			Value of the export (pesos)		
	1933	1934	1935	1933	1934	1935
<i>Stockfarming products:</i>						
Live animals . .	39,962	61,539	57,653	4,324,471	8,147,856	8,054,796
Meat	561,231	559,907	559,859	182,010,938	200,732,409	223,347,361
Hides and skins .	159,325	145,845	163,072	80,774,947	82,029,365	97,975,713
Wool	158,724	111,030	136,461	93,852,243	119,215,493	115,316,186
Dairy products .	30,249	30,249	25,391	20,615,380	16,632,504	15,369,771
By-products . .	176,002	176,002	205,349	35,622,572	37,490,621	49,438,522
<i>Products of arable farming:</i>						
Cereals and linseed	11,442,252	12,824,410	13,769,346	602,611,788	825,822,658	872,253,354
Flour and meal .	468,069	516,673	478,250	21,994,587	29,719,142	27,952,622
Other products .	184,163	247,036	328,977	22,525,326	38,145,118	53,842,858

II. — BRAZIL.

In Brazil coffee occupies at present the first place among the agricultural products, so much so that in fact the welfare of the nation depends on the coffee situation. It is for that reason and in order to counteract the effect of monoculture on the position that of late the tendency has become more pronounced towards a diversification of crops, and the introduction of cotton growing, stock farming and the cultivation of oil yielding plants.

These branches of production may be now discussed in the above order, which is that of their importance, and we shall indicate their present position and the measures for their protection as taken by the State.

Brazil has a large external debt and its export balance forms the only source from which the country can obtain foreign currency for meeting its engagements

to the creditors of the Union, of the States and the communes. For this purpose is required an annual balance of 10,000,000 pounds sterling to provide for its credit services and the 5,500,000 pounds gold of the last season has been insufficient to cover the external commitments and the transfers which could not be postponed.

The falling off in the trade receipts of Brazil continues to be the determining factor of the national policy, which is at present based on the principle of commercial reciprocity; the success or the failure of this policy depends not so much on the excellence of the programme to be put into force, as on the effective carrying out at the right moment, on the skill of the negotiators of the trade treaties or conventions which are gradually to replace those denounced in virtue of the Decree of 30 December 1935.

One of the most important reasons for the denunciation of practically all the trade treaties is to be found in the high duties placed by nearly all the States on the importation of coffee, which is the main commodity exported from Brazil. In certain countries, these duties would be prohibitive except for the fact that, as appeared in the period of the worst depression, coffee is, among all products of prime necessity, the one which best resists both fiscal pressure and general shrinkage of consumption. This is clear from the figures:

Country	Importation of Brazilian coffee kg. in 1935	Import duties per 100 kg.	Total import duties paid in milreis	Value f. o. b. coffee milreis	Of the value in respect of the import duties paid
Italy	26,355,120	Liras 1,600	606,800,282	60,480,825	9.9
Germany	52,260,420	RM. 160	436,813,494	125,225,399	28.6
Spain	4,224,420	Pesetas 215	21,716,264	9,738,285	44.7

The immense importance to Brazil of the duties placed on coffee is due to the place held by the product in relation to the total export figures, as shown below for the last five years.

Years	Metric tons		Pounds sterling gold		Value of coffee	Value of other products
	Coffee	Other products	Coffee	Other products		
1931	1,071,052	1,165,052	34,104,000	15,440,000	69.07	30.93
1932	716,114	916,151	26,238,000	10,391,000	71.90	28.10
1933	937,558	983,214	26,168,000	9,622,000	72.79	27.21
1934	848,812	1,335,970	21,541,000	13,699,000	61.13	38.87
1935	919,764	1,841,998	17,374,000	15,638,000	52.55	47.45

It is clearly seen from these figures that the diversification of the national agriculture with a view to export requirements is calculated to promote trade and to give greater stability to the balance of payments. It may be asked whether it is really advisable to encourage the production of other commodities and to embark with resolution on the path of diversification of crops in the interest of the export trade. It can only be said that there is in Brazil a strong current of opinion in this direction.

From the figures presented here certain other conclusions may also be drawn, such as that suggested by the fact that during the period 1931 to 1935 there has been a decline both in the volume of coffee exports and also even more markedly in their total value; whereas this decline is less or non-existent in the other products. A more definite impression of the decline in the Brazilian coffee trade is gained when the comparative summary of the two last four year periods is examined. In that of 1927-28 to 1930-31, the world consumption of coffee was 23,400,000 bags of 60 kg., of which 15,400,000 bags were of Brazilian origin, and 8,000,000 came from other producing countries; in the period 1931-32 to 1934-35 the total consumption fell to 23,000,000 bags and the supply from other countries increased by more than 8,000,000 bags, and consequently the Brazilian contribution was less by more than 1,200,000 bags.

The precarious situation of coffee made itself felt in a twofold direction: the gold price was not sufficient to cover the requirements of the balance of payments while the home price did not cover the costs of production. The following figures show quite clearly the situation of Brazilian coffee in respect of its quoted prices, its initial cost and the overhead costs in comparison with these costs in countries which compete directly with Brazil.

	Selling price at Havre francs	Overhead costs fr. per bag	Growers' receipts fr. per bag	% of the theoretical profit of the grower
Colombia	175.00	39.50	135.50	77
San Salvador	130.00	53.00	77.00	59
Brazil	120.00	71.70	48.30	40

If there be taken into account the low prices of the Brazilian coffees in comparison with that of the finer coffees of Colombia and of San Salvador, and if it is also noted that these overhead costs mentioned are invariable for all classes of coffee, the great importance of improving the product intended for export will be evident, alike from the standpoint of the grower as from that of the national economy. Even if such improvement is confined to half the total export of coffee from Brazil and if this total is calculated at 15,000,000 bags, Brazil would secure a profit of 185,000,000 dollars in place of the 130,000,000 which is the approximate amount now obtained.

This question of improvement is closely linked not only with that of the encouragement of export but also with that of the productivity of the plantations and with that of the reduction of the total output. As regards the latter

question the proposed cutting down of one fourth of the existing coffee trees would be an effective and economical measure. The problem of over-production of coffee and saturation of the market is one which is of peculiar interest for Brazil but it also affects other producing countries, especially since the fall of prices imposed by Brazil during the years of crisis which began in 1928-29, although as already remarked, coffee among the products of first necessity is not one of those most affected by a general shrinkage in consumption. In any case the figures are very large and the present disproportion between the production of Brazilian coffees and the export quotas is such that if the production for 1936-37 is reckoned at 22,500,000 bags and the export at 15,500,000 and if this surplus is added to the quantities carried over of the previous years, it appears that in July 1937 the surplus stocks of Brazilian coffee will amount to 13,200,000 bags.

Another much disputed question for the external trade in Brazilian coffee is that of the intermediaries between the grower and the consumer, the middlemen profits being estimated at 400 per cent. of the initial value of the product. Even if this figure is regarded as exaggerated, the economy which might be effected by a corporative or co-operative organisation of distribution would seem to be very large. Such considerations have led to the idea of founding general stores of coffee in the principal centres of the world market. The scheme is not in itself a new one; it was tried in 1907 and maintained up to the great war by the State of S. Paulo which set up depots of this type at Hamburg, at Havre and at Antwerp, a charge of 5 gold francs per bag being made for management expenses. Since this first attempt was a failure the repetition of such a scheme and expectations of its utility hardly seem justified. It would seem more urgent to combat the losses caused by the present practice of using substitutes. While the trade in coffee has been reckoned at an annual average of 24,000,000 bags, that in substitutes, according to recent German statistics, varies between 18,000,000 and 20,000,000 bags.

There is no dearth in Brazil of organisations which protect the technical, economic and even political interests of coffee. It might almost be said that their numbers have given rise to clashes and conflicts which do not always find a harmonious settlement to the best advantage of all interests concerned.

Requests have been made to the public authorities on the occasion of more than one national conference for the establishment of an official organisation which would unify production and trade in view of the export. Following on the international Conference held at Rio de Janeiro in 1931, the Council of coffee producing States was formed the programme for which was prepared at the meeting of December of the same year by the representatives of these States and of the coffee trading centres.

In February 1933 this Council was replaced by the National Department of Coffee (D. N. C.), a self-governing organisation subordinate to the Ministry of Finance, the powers and functions of which were confirmed by the meeting of July 1935.

The main objects of the D. N. C. are to collect the taxes and other dues on coffee, to establish statistics on the production, consumption and distribu-

tion, as well as on the relations existing between these, to destroy by burning the surplus coffee and to purchase a percentage amounting compulsorily to 30 per cent. of the gathered product; to distribute money premiums to establishments for the improvement of the product and to growers in general, to carry on international propaganda and valorisation of the product and to undertake the protection of the trade in coffee, in short to supervise all private activities connected with the growing and the marketing of coffee.

The sources of income of the D. N. C., according to the terms of the Convention of 1935, are as follows:

(1) a tax of 15 milreis (known as the five shilling tax) per bag of coffee and earmarked for the purposes of the loan of 20,000,000 pounds sterling contracted by the State of S. Paulo;

(2) a tax of 15 milreis per bag, reduced from 30 milreis (known as the ten shilling tax) earmarked for the amortisation of the obligations of the D. N. C.;

(3) a tax of 15 milreis per bag established by the coffee-growing States, the proceeds of which are devoted to the carrying out of the operations undertaken by the D. N. C.

These operations include the measures taken for encouraging the improvement of the product, for example, the foundation of establishments (numbering now some 40) for the preparation and improvement of the product; and the premiums granted on fine coffees varying from 3 to 5 milreis for selected coffees, if they are not of inferior class to the standard No. 3 of the New York Exchange.

These functions of the D. N. C. in relation to the improvement of Brazilian coffees were ultimately assigned to the Coffee Technical Department which is subordinate to the Ministry of Agriculture and is financed on the basis of one milreis per contribution assigned to the D. N. C.; up to the present time, however, the National Department of Coffee has not given up its specific activities.

All questions of transport and of placing on the market are dealt with by the D. N. C. The provisions of 1935 have been in part modified and in part ratified for the coffee harvest of 1936-37 taking account of the serious nature of the problem of coffee surpluses. The compulsory quota is maintained of 30 per cent. of the production to be sold to the D. N. C. at the unchanged price of 5 milreis per bag including the bag.

All *ordinary* coffees presented to the Office are distributed into three quotas: (a) D. N. C. quotas of 30 per cent.; (b) retained quota of 30 per cent., and (c) direct quota of 40 per cent. Choice coffees and those competing for the premiums for fine coffees, are divided into two quotas: (a) D. N. C. quota of 30 per cent. and (b) preferential quota of 70 per cent. No shipment of coffee (retained or direct quota and preferential quota) is authorised until the D. N. C. quota has been delivered to the depots; coffees of the retained quota are sent to the regulating warehouses; and only those of the direct quota and the preferential quota may be consigned direct to their destinations.

In addition to the D. N. C. which functions at Rio de Janeiro, there is the Coffee Institute in S. Paulo, but there is a decided opposition between

the two institutions. Such was the case in relation to the premiums to growers of fine coffee and also in the scheme for cutting out the fourth part of the existing coffee trees. In both these cases, the Institute had the support of the S. Paulo growers who were also the first to censure the famous burning of the 36,000,000 bags of coffee in 1931.

Other initiatives and schemes are in process of formation or enquiry which may prove useful for the Brazilian coffee trade and that of the world; such are the foundation of a National Export Institute (opposed by the Federal Council of Foreign Trade in its session of January 1936), that of a National Bank of Coffee, that of an International Coffee Bureau, etc.

In regard to the large scale initiation of multiple cropping now in progress in Brazil, it may be noted that cotton takes the second place in the foreign trade balance.

Ten years ago S. Paulo grew a little cotton only and of poor quality, some millions of kilogrammes of fibre hardly sufficient for its own newly undertaken textile industry. It seemed as though this crop promised little as to industrial utilisation and less as regards export. It was when the coffee crisis began to be felt that attention was turned to cotton which now represents a value of 900,000 contos (1 conto = 1,000 milreis) and is tending to increase. At the present time Brazil occupies the fourth place among the cotton fibre exporting countries after the United States, India and Egypt.

The 1936 crop is estimated at 1,743,000 bales, while the 1934 and 1935 crops yielded 1,011,000 bales and 1,332,000 bales respectively.

For the coming year it is calculated that the export will be nearly equal to the production seeing that the estimates of the demand have noticeably increased during this season. In any case and taking the data at present accessible, the volume of raw cotton exported from Brazil in 1935 was 138,000 tons of an approximate value of 5,200,000 gold pounds. Moreover cotton which in 1935 represented less than 5 per cent. of the total of Brazilian exports during this past year amounted to 16 per cent.

As regards protection of cotton growing, the growers themselves form organisations and are gradually dealing with the problems inherent alike in the production and in the distribution of the product and with those that relate to the better industrial utilisation of the by-products and especially of the oils.

In this connection it is to be anticipated that a decisive importance will attach to the National Cotton Conference when the agenda will include the requirements of the industry, the qualities required of the product on the present markets, the question of large co-operative establishments, the control of the product and the joint campaign against the principal diseases and pests of the cotton plant.

A well considered scheme, embracing the agricultural and the industrial aspects alike, for the large scale cultivation of oleaginous plants would enable Brazil to occupy a place of great importance in this respect as the natural conditions of the country are peculiarly favourable for this production.

The world consumption of vegetable oils (not including olive oil) amounts at present to 18,000,000 tons equivalent to 190,000,000 pounds sterling. The

share of Brazil, with 30 different products in this total is 231,392 tons (1935) for a value of 205,000 contos de reis.

The authorities began to pay attention to the problem of vegetable oils in 1931, the year in which was established the Institute of Vegetable Oils which ceased to function two years later. Now the attention of official circles is again being directed to the industrial and commercial utilisation of oil-yielding plants. Special attention is being attached to cotton the by-products of which yielded a total export of 136,000 tons in 1935 and to the Carnauba palm (the oil of which is exported only by Brazil), and the formation of a special service for the study and utilisation of these products is under contemplation at the Ministry of Agriculture.

As regards stock farming in Brazil, some figures may be given relating to stockbreeding in the State of S. Paulo and supplied by the Secretariat of Agriculture, Industry and Commerce.

This State possesses at the present time some 2,700,000 cattle, 3,500,000 pigs 550,000 horses, 500,000 mules, 150,000 sheep and 200,000 goats. The organisation of the meat packing works is one of the largest in all Latin America. In 1934 S. Paulo produced 40,000,000 kg. of frozen meat for a value of 36,000 contos de reis; 12,000,000 kg. of preserved meats for 21,000 contos; 2,700,000 kg. of tinned meats for 4,500 contos, 600,000 kg. of hides for 18,000 contos and 40,000,000 kg. of derivatives for 45,000 contos de reis.

The Second National Stockbreeding Conference which was held in July of 1936 discussed a number of questions relating to the general and special organisation of arable farming and stock farming, and also technical and legislative questions. It succeeded in drawing the attention of the public authorities to this important element in the export trade which seems destined to constitute one of the bases of stability of the Brazilian trade balance.

III. — URUGUAY.

The Eastern Republic of Uruguay is another country of a definitely agricultural economy the prosperity of which is bound up with its arable farming and stockbreeding production and with the exports of its cereals and live stock and live stock products. From the beginning of the world crisis, in spite of the restrictions and sacrifices imposed on themselves by the population in respect of imports, the shrinkage of the exports has been such that the country was unable to pay for all that it was necessary to purchase abroad to meet its most urgent requirements. In consequence further restrictions were placed upon purchases abroad with a resulting fall in the customs receipts and an increase in unemployment as the inevitable outcome of the diminution in the economic activities of the Republic.

Since the prosperity of the stockbreeding and arable farming was recognised to be basic for the life of the nation, special attention to these two branches of agriculture was felt to be imperative.

In view of all these considerations, the competent Ministry submitted to the Government and to the Chamber a series of proposals all tending to the increase of the agricultural wealth of the country.

A brief examination will now be made of these measures which culminate in the law of compulsory land settlement, an initiative of immense importance for the future of the Republic, in view of the fact that the area of Uruguay is some 72,200 square miles and that out of 1,800,000 inhabitants 40 per cent. are resident in the capital. To resolve this question of excessive urbanisation is essential to the establishment of sound economic and social conditions of the Republic.

Taking into account the fact that the basis of the wealth of Uruguay is its stockfarming, cereal growing being the second factor, the measures taken by the Government for the protection of both these branches of agriculture may be reviewed, ending with a survey of the plan of land settlement which is designed to benefit both alike.

All questions relating to the national stockbreeding form undoubtedly the most fundamental problem of the Republic, since stockfarming in its various aspects accounts for the largest proportion of Uruguayan export values. For this reason, one of the first measures adopted by the Government, when in 1933 a programme of national reconstruction was undertaken, was to order an enquiry into and framing of a complete plan of encouragement and assistance to be given to live stock production, the first step towards improvement being that of supplying to the stock farmers the selected breeding animals necessary for improving the quantity and quality of the meat and wool produced by the country. At the same time a well considered and far reaching scheme for control of the stock diseases prevalent in Uruguay which occasion enormous losses to the national economy.

As regards the stimulus given to a production of better quality, the Law No. 8858 of 29 June 1932 granted premiums for production of quality, fixing for the granting of these premiums a period of three months from 15 July to 15 October of each year; taking into consideration however that no very great advantages could result from so limited a period, a further proposal, more liberal in its terms and covering a longer period, was presented to the Chamber. This proposal, which was adopted and is now in force, has proved a remarkable encouragement to meat production and has contributed to bring about the development of stock farming on the large commercial scale. The legal measure prolonging the term for the concession of premiums had the further advantage of supplying work to a larger number of workers thus rendering it possible effectively to combat rural unemployment and to obtain from the land higher returns than those obtained before the adoption of the new scheme.

One of the most important measures taken by the Government for the protection of the national stock breeding consists in a series of regulations for the improvement of wool production. All these legislative provisions are completed by that known as the "Wool Campaign" which is to be carried on over a period of five years, and is designed to effect the improvement of the breeds of sheep

for which Uruguay is already renowned, as well as to secure a large increase in production. The chief provisions constituting the "Wool Campaign" are the following:

- (a) Prohibition of the sale and utilisation of sheep of inferior quality;
- (b) Facilities given by the State to breeders for the importation of selected breeding animals;
- (c) Rebates allowed for the transport of wools by rail.
- (d) Exemption from fiscal dues and customs charges for all material and machinery intended for the wool industry.

As related to the policy of protection of the live stock production and the export of live stock products may be considered also the law of 3 March 1934 which regulates and improves the working of the *Frigorífico Nacional*, an institution which safeguards the interests of producers and consumers alike. Since this organisation became the sole purchaser the price quotations for meat showed perceptible improvement and as a result of the better methods of handling and sale of meat and by-products as carried out by the *Frigorífico* the profits obtained are higher. This institution has displayed great activity in respect to the placing of Uruguayan live stock products on the foreign markets, combating with success the policy of tariff walls and quotas and securing new trade channels for these national products.

By a decree of 5 April 1933 grazing dues were reduced by 50 per cent. so as to lower the cost of production of meat. This is explained by the fact that the greater proportion of the herds intended for slaughter are moved by road from the stock farming zones to the selling market, owing to the high railway rates and sometimes because no railroad transport is available; and accordingly during their transport the herds graze on any pasture found along the route.

Measures have also been taken for the control of the stock diseases which cause destruction among the herds of certain regions of Uruguay. In this connection mention may be made of the very careful provision which has been made for preventing the spread of mange in sheep.

Uruguay is a deficit country in respect of cereal production, and especially in respect of wheat. This deficit has at times placed the country in difficult situations, as in 1935, when, as a result of the poor wheat harvest of the previous season—due to unfavourable sowing conditions and the locust invasion—the Government was obliged to decree, on 17 April 1933, an import of wheat to meet the requirements of the flour mills. Not only was the immediate problem of the shortage of wheat solved by this Government import, effected through the Bank of the Republic, but it proved to be an economic benefit with lasting effects on the situation of the growers. Subsequently there was passed on 13 December 1934, a law which fixed the minimum price of wheat at 5 Uruguayan pesos per 100 kg. on the market of Montevideo and 4.5 pesos per 100 kg. on the inland markets. The law also contained fresh provisions ensuring an advantage to the grower from the establishment of the fixed minimum price. With this object full control was given in the matter to the Bank of the Republic which obtained wide powers of inspection extending to

the examination of the book-keeping of dealers and manufacturers participating in wheat purchases. This law may be said to have constituted an important step in favour of the farmer who, for the future, will not find himself stripped of his profits by speculative transactions tending to lower the value of his commodity.

Of all the measures taken by the Government of the Republic in the course of its campaign of reconstruction of the national economy, that which has assumed the most striking proportions and which holds the most promise for the future of Uruguay, is the Decree Law of May 1933 which declared it to be compulsory to cultivate the land. The purpose of this Decree was not merely to combat the excessive urbanisation already mentioned, but was also that of giving a wider extension to cultivation. As stated in the preamble "this wider extension is not merely an element in developing live stock production but is also a determining factor in its fundamental transformation which, by increasing the volume and diversifying the character of the exportable products, will strengthen the whole economy of the country and render it able to resist effectively the present world depression."

The clauses of the decree may now be briefly reviewed: The new land to be settled lay within four zones: in the first of these, which included the departments of Montevideo and Canelones, the obligation to cultivate extended to 30 per cent. of each estate in the Department; in the second, consisting of the Departments of Colonia, Soriano and San José, the obligation to cultivate applied to 8 per cent. of the estates of these Departments; in the third zone, Durazno, Rio Negro, Paysandu, Florida, Lavalleja, Flores and Maldonado, the obligation to cultivate applied to 5 per cent. of estates of more than 5000 hectares in area; on the last zone, formed by the Departments of Artigas, Rivera, Salto, Tacuarembó, Cerro Largo, Rocha and Treinta y Tres the obligation applied to 3 per cent. of estates of more than 500 ha.

Exemption from this obligation to cultivate is granted in the case of holdings of land on which the area fit for cultivation is not, in the first and second zones, twice, and in the third and fourth zones three times, the percentage area the cultivation of which is incumbent on the owners; in such cases a third part at least must be cultivated of the percentage indicated with exception of land in the zone which in the judgment of the Department of Agriculture appears to combine exceptional conditions for natural pasturage which would make the breaking up of the land inadvisable.

In addition to the proportion of cultivation established by this law for all land ownership of the country without distinction of locality or area, the decree made it obligatory to plant trees at the rate of three per hectare in the first and second zones and of two per hectare in the third and fourth zones. This obligation was to be fulfilled within a maximum period of five years.

With a view to facilitating continuous dwelling on the new cultivated lands thus formed the Decree law establishes that when the lands exceed 3,000 hectares in area it shall be compulsory for the owner to erect as many dwelling houses as there are fractions of 3,000 hectares on the land thus formed and

that these dwellings shall be situated outside the principal area of the land itself. It is also obligatory for the landowner to place in each of these dwellings persons having a family.

As regards financing, it was established by the Decree Law that the Bank of the Republic should make provision, by means of special credits, for the fuller and more prompt application of the terms of the Decree relative to the resources considered necessary for the fulfilment of the commitments.

In view of the benefits to be obtained by such a scheme of settlement the Government has had recourse to the land of which there is so ample a provision in Uruguay. For the production of the 1,000,000 tons of cereals required for export it is necessary to utilise 1,200,000 hectares of land while 800,000 hectares are required to meet the needs of internal consumption, thus making up the 2,000,000 hectares which it is essential to bring under cultivation and for which provision is made by the terms of the Decree Law cited above.

The beneficial results of the application of the land settlement Decree Law are already beginning to be felt: in 1934, one year after the coming into force of the law, linseed growing had increased by 60 per cent.; the harvest indicated a considerable increase on the crop of the previous year and gave assurance of large supplies of the product for export with the resulting advantages for trade and the national economy. In the commercial crops which have been widely grown in the new zones of cultivation, the sowings of oleaginous plants, the yield from which replaces olive oil, have increased from 1,800 to 5,200 hectares which is proof of the interest with which the farming population have responded to the Government schemes. In view of the fact that till then Uruguay was importing nearly all oils required for consumption, it will readily be seen that this increase in production already represents an advantage on the trade balance and will in the future represent a larger one.

As part of the campaign of protection of agriculture attention has been devoted by the Government also to the branch of vine growing and wine making. An example of this policy is to be found in the law of 25 January 1934 which set up the advisory committee known as "Pro Industria Vitivinicola," the purpose of which was reduction in costs of production and assistance to growers in the sale of the product. This same law provides for the constitution of a fund for protection and development intended to defray the expenses of a station for experimental work in vine growing and wine making, an important centre in view of what may be done for the future development of a cultivation which in becoming a commercial undertaking will undoubtedly take its place as part of the economic wealth of the country.

Subsequently, a decree dated 10 February of the same year was enacted by which the minimum price was fixed for table grapes and also for wines already prepared. This enactment was renewed in 1935 so as to secure the interests of the vine growers and of the wine making industry.

The main outlines have here been traced of the chief forms taken by the policy of protection of agriculture in Uruguay, while no reference has been made to other aspects which may be described as subsidiary as relating to

products of less vital importance. It is however indisputable that the scheme of protection initiated in 1933 is in its main lines complete. In fact the work of giving it effect has been so great that it has become necessary to divide the Ministry of Industries which, up to a short time ago, dealt with all aspects of agriculture, into two Ministries: that of stock breeding and agriculture, and that of industry and labour.

E. MARTINEZ.

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[In the International cotton trade the importance of futures trading as a special type of stock exchange transactions is well understood. In futures transactions, where the dates fixed for purchase and delivery are fairly widely separated, very considerable losses sometimes occur, in consequence of price fluctuations during the interval. The high risk involved in futures trading on the cotton market is most readily observed if it is considered that price variations of one cent per lb. only of a average United States harvest of 15,000,000 bales may occasion a total risk between purchase and delivery dates of some 100,000,000 dollars.

With a view to the elimination of these serious risks so far as possible in the international cotton trade, the hedging system was devised. "It is difficult to define hedging," says Prof. John A. Todd, the well known cotton expert, in *The Cotton World*, London 1927, p. 66, "but in effect it is a means of insurance against risk by setting up for each contractual obligation a parallel or collateral contract which will work the other way, so that if the original contract results in a loss the other will produce a profit to set off against the loss."

In the work here reviewed the author examines in detail the various hedging contracts in futures trading, their nature and form, as also the carrying through and winding up of hedging business, alike in the international cotton trade as particularly in the German cotton trade and industry. The purpose of this examination is not to bring out the general economic significance of the futures trading for the study is undertaken rather from the standpoint of private business management. With the isolation of the national markets from the world market, as also in consequence of the fact that foreign currency values are not always available for international futures trading, in many countries the cotton futures market has for the present been deprived of its economic basis. None the less the problem of the structure of the hedging system and of the futures market remains as such a real one, since the present inhibiting factors cannot, supposedly, long continue to be effective; otherwise the whole of international trade in commodities is completely held up.

The book which is compiled for the practice of the cotton market contains numerous tables and well executed graphs. It will be found very useful by all connected with the cotton trade and its frequently highly complicated transactions].

M. T.

MURAT Auguste. *La propriété agraire en Italie*. Lyon, L'Imprimerie de Lyon, 1936. pp. 425.

[This work is not confined, as its title would seem to indicate, to a study of agricultural property in Italy; it deals also with the agricultural policy of the Fascist Government in its fundamental aspects.

The A. begins by considering the geographical conditions of Italy from the physical and human points of view. He proceeds to examine the different kinds of property: State property, property of the Communes, collective property and private property. After this he describes the various types of farming: small occupying ownership, cash tenancy, share tenancy, *métayage* and wage-earning labour.

In the second part of this work M. Murat sets out the present meaning of the doctrine of the social function of property and the first applications of this doctrine, namely, syndical and corporative organisation (collective labour contracts), the struggle against the system of day labour (share contracts) and the direction given to agricultural production (the « wheat campaign »).

The third part of the work in question is devoted to comprehensive land improvement; it examines successively what it is, the means and methods by which it is carried out and, lastly, the results attained.

The work concludes with a systematic bibliography, containing the indication of the most important publications, grouped according to their contents in three sections: I. General works (general treatises; works relating to Italian economic problems; works relating to comprehensive land improvement; articles in reviews or journals). — II. Statistics, inquiries, monographs and reports (Italian economic problems; comprehensive land improvement). — III. Documents, reviews, journals (Parliamentary documents; laws and decrees; journals and reviews)].

J. PERTHUIS de la Salle. *La politique française du contingentement*. Macon 1935.

[This study contains three parts. In the first the situation of French economy in 1931 is examined. As the author remarks, it is essential to a proper understanding of the quota policy in France to recall the conditions in which it came into existence. These conditions were, on the one hand, the reactions of the foreign trade of France to the world crisis, and, on the other, the effects as felt on the French market of the system of customs agreements to which may mainly be attributed the appearance of those partial and limited prohibitions otherwise known as the quotas and constituting according to the writer a defence reaction on the part of the French market. Subsequently the persistence of the abnormal conditions referred to made it necessary to organise a systematic policy of quotas, a policy which had originated as a temporarily improvised measure, and to substitute for a series of expedients merely, a system which, although understood to be temporary in character, was framed with all the consistency possible.

In the second part an examination is made of the development of this quota system, under two sections corresponding to two separate phases in the quota organisation: *viz.*, the unilateral form of quota-fixing and the contractual method. Each one of these two phases has been in its turn divided in accordance with the two methods of application that have been followed.

In regard to the unilateral quotas, the period of application of which falls exclusively between July 1931 and September 1933, the writer in the first place examines the primitive form of the "global" quota. This form had not only disturbed the markets, upset prices, encouraged speculation and had been an element in the rise of the cost of living, but had also given rise to administrative difficulties, since, in view of the fact

that it was impossible for any one customs office to ascertain quickly the imports passed through the other offices, the quantities fixed by the quotas were continually being exceeded. This form rapidly gave place to the relatively improved scheme of mathematical distribution by country. The author reviews this new system by which the quota assigned to each country had been fixed up to the end of 1932 at the average of its imports into France of the five preceding years, and later from 1933 on the basis of the 1932 figure. For 1934 a new base period had been taken constituted by the three previous years, but subject to correction in consideration of the abnormal volume assumed by foreign importations during this three year period.

As however experience revealed many drawbacks in this system (notably the fact that the averages even if calculated exactly could not give more than empirical indications), the author recalls the decision which was the outcome of a communiqué of the Cabinet Council of 1 September 1933 according to which quotas would be for the future arranged against equivalent facilities accorded by the foreign countries to exports of French products to their shores. In order, however, to maintain so far as possible the traditional directions of trade, the fourth part of each quota was to continue to be distributed in accordance with the principles as formerly applied.

After an account of this new method of quota-fixing, the question is then examined of the distribution among the importers of which there have been two distinct phases as was the case with the method of fixing quotas of import from abroad. Actually the internal working was in the first place ensured by an exclusively national direction and later was passed over to management by the foreign countries concerned.

The third part contains an interesting review of the results of the quota fixing policy in which there are examined not only the consequences for the nation (whether as relating to prices, or to unemployment) but also the international effects, *viz.*, the reactions abroad, the part played by and the range possible for producers' agreements.]

F. A.

SCHOEN A. *Le Marché agricole français et les interventions de l'Etat*. Paris 1936.

[As indicated by the title, this enquiry deals with the forms taken by State intervention on the French agricultural market as and when the need for such intervention came to be felt and the public authorities became impelled to measures of protection, taxation and regulation. We are concerned herewith a phenomenon well-known at the present day to which the name of planned economy is ordinarily given and which has been defined in an interesting way by Professor Pirou. According to this author, planned economy borrows from the doctrine of free economy the conception of private property. The phrase has no significance of a transfer of undertakings or of their management to the State; but it retains from socialised economy the idea of plan. In consequence, it superimposes on individual and private activities, which are left untouched, a general framework designed by the public authorities, and it is anticipated that in this way private and individual activities will be given a direction by the State, will be canalised by the public authority along lines conforming to the general interest, which apart from this intervention these activities would not have followed.

Before approaching the main subject of his enquiry, M. Schoen examines the general characteristics of the problem of State intervention in economic life. After touching on "mobile" interventions, the author deals with the forms of intervention which he divides into schemes of external protection (customs duties, quota-fixing, etc.) and forms of intervention on the national markets (control of prices, of supply and of demand).

A detailed examination follows of the various measures taken by the French Government in view of improving conditions of the market for agricultural products. After giving an account of the interventions of a general character—improvement of conditions of production, extension of trade channels and assistance to the financial resources of farmers—the author treats more fully of the State interventions in particular on the markets of wheat, wine, sugar beet, alcohol, meat, milk, resin products, chicory for coffee, all being handled in relation to the structure of the national and world market of these products.

This central portion of the enquiry concludes with the question of premiums granted for the production of milk, hemp, olives and silk.

The third part is devoted to the examination of the various arguments for or against State intervention.

A bibliographical table on the question of State intervention provides the means of following up the study of this important problem.]

F. A.

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(1) Previous list September 1936. To be continued March 1937.

(2) List of abbreviations: bihebd. (biweekly); bimens. (twice monthly); bimestr. (every two months); déc. (every ten days); étr. (foreign price); f. (copy); heb. (weekly); int. (home price); irr. (irregular); mens. (monthly); nº. (number); N. S. (new series); p. a. (per annum); q. (daily); sem. (half yearly); s. (series); trihebd. (every three weeks); v. (volume); trim. (quarterly).

(3) Between brackets [/] are given translations and explanatory notes not appearing in the title of the review.

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